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The Harveian Oration.

Delivered at the Royal College of Physicians of London on Oct. 18th, 1916,

BY SIR THOMAS BARLOW, BT., K.C.V.O., M.D., F.R.S.,

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

HARVEY, THE MAN AND THE PHYSICIAN.

MR. PRESIDENT, FELLOWS OF THE COLLEGE, AND GENTLEMEN,—Once again we meet on St. Luke's Day to commemorate the benefactors of our beloved College and to carry out the injunctions of the illustrious Harvey, who was the greatest benefactor of them all.

COMMEMORATION OF BENEFACTORS.

As in duty bound, we recall to grateful remembrance the name of Linacre, our first President. He was the real founder of the College, for it was largely through his enlightened counsel that Henry VIII. was induced to confer the Charter. He was not only a pioneer in the revival of learning in this country, but he was a physician in the highest sense; he laid the foundations of the College on broad and noble lines, and, Churchman though he was, he kept it free from any ecclesiastical domination. The early meetings were held in his house in Knightrider-street, and it seems clear that during his lifetime he presented his house to the College.

The services of John Caius to the College of Physicians come only second to his benefactions to Gonville and Caius College, Cambridge. He was elected President no less than nine times, and the "Annals" written with his own hand from 1555 to 1572 were not only invaluable as records, but helped to make and maintain the College tradition. The caduceus, which is one of the insignia of the President's office, was his gift. We commemorate Caius not only as a great scholar, but as the first teacher of anatomy in England, as a naturalist, and as one of the early writers on clinical medicine, as evidenced in his careful study of the sweating sickness.

Richard Caldwell, who was our President in 1570, must be always gratefully remembered for his endowment jointly with Lord Lumley of the Lumleian lectureship.

William Gilbert, the pioneer in the study of magnetism, justly designated the father of experimental philosophy in England and the inspirer of Galileo, was our President in 1600 and bequeathed to us his library, globes, instruments, and mineral collection.

Then comes Harvey, and I will limit myself for the present to the enumeration of his material benefactions. In 1651, when he was 73 and living in retirement, though still Lumleian lecturer, he offered to build and present to the College, then situate at Amen Corner, a library and museum. In two years' time these additions to the edifice along with a great parlour or conversation room in which the fellows could meet, were duly presented and conveyed during the presidency of Dr. Prujean. In 1656, when he resigned the Lumleian lectureship and said good-bye to the fellows, he gave his patrimonial estate at Burmarsh, on the Kentish coast near Dymchurch, to the College. The value of this estate was at that time £56 a year, and Harvey's desire was that an annual feast should be held, that an oration in commemoration of benefactors should be given, that a fee should be given to the orator, and a salary to the keeper of the library and museum, which he had already founded and furnished. Finally, in his will, having taken the precaution of securing that if any part of the building which he had already given were not completed money from his estate should be provided for its completion, he devised books and papers and his best Persia long carpet and his blue satin embroidered cushion and a pair of brass andirons, with fire shovel and tongs, for the ornament of the meeting-room which he had erected. The record of these simple gifts is precious, because it shows that the solicitude of Harvey was not only for the advancement of medical learning but for the promotion of the amenities of the College and that the meeting room should be as far as possible like a home to the fellows.

Theodore Goulston, who was one of Harvey's younger contemporaries and was Censor for a time, left an endowment for a lectureship to be given to one of the four youngest fellows of the College.

Sir Theodore de Mayerne, who was another of Harvey's contemporaries, was like his fellow countryman Casaubon, an example of the fundamental tolerance and broadmindedness of the English nation. After a distinguished medical career in France he was hospitably received in this country and rose to be Court physician to James I. and Charles I. He became a fellow of our College, gained a high reputation, and bequeathed his library when he died.

We next come to Baldwin Hamey, junior. He was another of Harvey's contemporaries and, indeed, one of his most intimate friends. He was our treasurer from 1664 to 1666 and gave anatomical lectures to the College. Though a strong Royalist he had a lucrative *clientèle* amongst the leading men of the Commonwealth and was our most munificent benefactor. The local habitation of this College in 1651 was Amen Court on land belonging to St. Paul's. The security of tenure was in grave peril from threatened levies on church property. With splendid foresight Hamey brought the property and presented it to the College free of all encumbrances. After the fire of 1666 the College was rebuilt in Warwick-lane and Hamey contributed to the cost of rebuilding. He decorated the Cœnaculum with rich woodwork of Spanish oak and some of this beautiful wainscoting was utilised for our Censors' room when the College was removed to its present site. Finally, Hamey followed his friend Harvey's example by settling in 1672 the estate of Ashlins at Great Oagar in Essex upon the College. There was a gracious personal note in Hamey's last gift, in that over and above a contribution to general purposes he allotted part of the annual income which would accrue to be devoted to the augmentation of Harvey's special benefactions.

The Marquis of Dorchester was one of our few honorary fellows and may also be considered to belong to Harvey's circle. He had been a devoted student of physic and anatomy and had probably gained Harvey's regard in Oxford. At all events Harvey was one of his sponsors when he was elected. He greatly enriched our library.

Dr. Croone was Censor in 1679 and was one of the original fellows of the Royal Society, of which for a time he was secretary. To him we owe our most valuable endowments. He had intended to found two lectureships, one at the College and the other at the Royal Society, and his beneficent intention was carried through by his widow, who subsequently became Lady Sadleir.

I have further to enumerate the Bradshaw, the Milroy, the FitzPatrick, the Oliver Sharpey, and the Dobell lectureships, the Murchison and Jenks scholarships, the Baly, Moxon, and Hawkins medals, the Swiney prize, and the Weber-Parkes prize and medals for the encouragement of the study of tuberculosis by Sir Hermann Weber, the Nestor of our fellows, still, I rejoice to say, in our midst, beloved and honoured by us all.

By your permission, Mr. President, I have to announce that in June last Mrs. Eliza Streatfeild, of 22, Park-street, Mayfair, acting upon the advice of our friend, Sir John Tweedy, offered a sum of money to the two Royal Colleges for the purpose of endowment of research. The offer was gratefully accepted, and the deed approved by this College at the last quarterly Comitia provides for the transfer of £10,000 2½ per cent. annuities into the joint names of the two Colleges as trustees to be known as the Streatfeild Research Fund, the interest to be applied to the promotion of research in medicine and surgery.

HARVEY'S EARLY STUDIES.

And now let us return to Harvey himself, the greatest of our benefactors. For we measure our indebtedness, not alone by the munificence of gifts in their money value, but by the additions made to the science and art of medicine, by the examples of devotion to the highest aims of life, and by the proofs of attachment to the best medical interests of the body politic which this College has endeavoured to safeguard and to represent. Weighed in these balances none will deny Harvey's supremacy.

I shall not trespass on your good nature by recounting in detail the oft-told tale of Harvey's life and great discovery. It may well be said that there is nothing more to be obtained

from a quarry that has been so often and so assiduously worked. If some of the points to which I ask your attention may seem of minor importance in themselves I may claim the excuse that everything which throws even a fresh glimmer on Harvey's life and character is at least worthy of consideration. We know that the young Harvey was a pupil at the King's School, Canterbury, from the age of 10 to 15, where we may well assume that he gained the foundations of that classical knowledge which stood him in such good stead throughout his life. It was there probably that he made his first acquaintance with Virgil, whose poetry fascinated him in his later life; is it possible that he may even have begun to read Aristotle, whose influence over him was greater than that of any other writer, ancient or modern?

But were there no other studies than the classics which laid hold of young Harvey in his schoolboy days? Dr. Venn, the learned President of Caius College, Cambridge, has drawn my attention to the regulations of the scholarship which Harvey obtained and which enabled him to go from King's School, Canterbury, to Caius College for six years. The scholarship was founded in 1571 by Matthew Parker, Archbishop of Canterbury, who was an intimate friend of Dr. Caius, and it is not unlikely that Caius influenced Parker in framing the conditions under which it was given. The most interesting of these is the enactment that at the University the scholar shall be educated first in subjects that pertain to or are serviceable to medicine and then in subjects which actually constitute medicine itself.

Such a regulation for a medical scholarship is very remarkable and Dr. Venn considers unique at that time. But let us consider for a moment its bearing upon Harvey and his predilections. It is not unreasonable to assume that he had already determined to become a doctor. Are we justified in any further speculations? We know that throughout his later life Harvey was not only devoted to comparative anatomy but that he was a keen naturalist. In Harvey's Prelectiones Dr. Norman Moore points out that there are references to the anatomy of no less than 80 animals. His book on generation is a perfect mine of observations on natural history. In his continental travel with the Duke of Lennox he complains bitterly that there was scarcely a dog, crow, kite, raven, or any bird or anything to anatomise; and when he was travelling with Lord Arundel in Germany, on the testimony of Hollar the artist, he made frequent excursions in the woods making observations on strange trees, plants, earths, and "naturalls," and caused some anxiety to Lord Arundel lest he should be waylaid or murdered.

This intense lifelong devotion to natural history is usually an inborn quality, and it is by no means unlikely that in Harvey's schoolboy days it was this strong predilection that justified the authorities in nominating him to what was practically a medical scholarship.

Harvey at Cambridge.

Harvey's first term at Cambridge began in May, 1593, when, we are told, he was admitted to the scholars' table at Caius College. Dr. Caius had been gathered to his fathers 20 years before. Dr. Legge, whom he had appointed as his successor, was of Caius' way of thinking in his Roman proclivities, and there was a stormy time in the College for awhile. There is no indication that Harvey was drawn into this conflict, and it may have quieted down when he entered the College. His tutor and surety was George Estey, who seems to have been a worthy parson and was appointed Hebrew lecturer the year after Harvey's entrance, but Harvey never refers to him.

Although Caius College had a medical reputation, we find rather meagre evidence of systematic instruction in medical subjects, and this in spite of Dr. Caius having laid down certain definite plans for its maintenance. He had obtained a licence for the dissection of two bodies annually in the winter and for their decent burial. The church registers give evidence that bodies, chiefly of prisoners, were dissected. Demonstrations were given.

Dr. Venn, by reference to the Exiit Book and the Computus Book of the College, which give detailed entries of the students' absences and the charges for their commons, has furnished me with some interesting and suggestive information about Harvey's time at Cambridge. As these entries have an important bearing on the question of when Harvey left Cambridge and when he entered Padua, I bespeak your consideration of them. It is commonly stated that Harvey took his B.A. degree in 1597 and that he left Cambridge in 1598 and entered Padua in that same year. I think you will see that that is incorrect. He entered Padua in 1600.

The Exiit Book, which was made up half-yearly, shows that during the first three years there were no absences. This may mean that Harvey did not leave the College at all during this period or for such brief intervals as did not involve any deduction from the stipend of his scholarship. We have to remember that one month's absence for holiday was allowed by statute, and that could be taken at any time. The Computus, or account book, is consistent, for it shows that Harvey's stipend from his scholarship was very nearly sufficient to pay the cost of his commons. But from 1596 to 1599 the Exiit Book shows repeated absences.

It is clear, then, that from those dates Harvey was away from College not less than sixteen months. Some of his absences were of two months' duration or more, and some of them a few days up to a fortnight, and from his own letter in Michaelmas, 1599, he evidently required at times a long period for convalescence. The accounts show that he only received a stipend for one quarter between Michaelmas, 1599, and Lady Day, 1600—so that his scholarship lapsed at Christmas, 1599. We know that, like Sydenham, Harvey suffered at various times severely from gout. He complained very little of his ailments and somewhere speaks of the help which his pathological and anatomical investigations gave him by rousing his keen interest and making him forget his pains. I suggest that the absences during the last half of Harvey's time at Cambridge were probably due to attacks of gout.

Harvey took his Arts degree in 1597, but there are no details obtainable concerning it, nor about his work at Cambridge after he had taken his degree. It is significant that there are no references in Harvey's works to his Cambridge life. His poor health and the limited facilities for anatomical study may have left this period as one which he would gladly pass by.

There is a categorical statement in Aubrey's memoirs that Harvey bequeathed the house in which he was born in Folkestone to Caius College, Cambridge, in spite of the protest of his brother Eliab. This has been quoted again and again, but, like many of Aubrey's statements, it is untrue. Harvey bequeathed nothing to Caius College.

Entry at Padua University.

We may take it, then, that following in the footsteps of Linacre and Caius and of other fellows of this College, Harvey went in the year 1600 to Padua and not in 1598. Now it is interesting to mention that an examination of the archives of Padua, made by the University authorities at Mr. D'Arcy Power's request, has failed to reveal any mention of Harvey before 1600. To quote from Mr. Power's admirable life of Harvey, there are entries which show that at the usual time of election—that is to say, on August 1st in the years 1600, 1601, and 1602—he was elected a member of the Council of the English nation in the Jurist University of Padua. This I take to have been a sort of students' association.

Those of you who have been to Padua will remember in the University courtyard the host of memorial tablets giving the arms and name and the nationality of centuries of alumni. Two in the lower cloister are alleged to pertain to Harvey. One of them is decayed and the inscription erased, but the other is well preserved, is undoubted, and gives 1600 as the date. This agrees with the data which I have given already.

The two most interesting things at the University of Padua are the great cathedra or wooden pulpit from which Galileo addressed his class in Harvey's time, and the anatomical theatre where Fabricius demonstrated his dissections to Harvey and his fellow-students. They are not far apart. There is a capital picture of the anatomical theatre in the charming book on Harvey written by Dr. Curtis of Columbia University and published last year. Dr. Curtis points out that the tiers are really standing-places with rails in front to lean upon, which arise at a very steep angle from the central pit. The arrangement now in vogue, in fact, more resembles that in our hospitals in which students stand and look down at the operations or at post-mortem demonstrations than an ordinary anatomical lecture theatre. Dr. Curtis makes the suggestive remark that "the place looks fit to have been a nursery of object teachers, for it is too small to hold a

pompous cathedra, and the veteran to whose Latin the young Englishman listened must have stood directly beside the dead body."

INTELLECTUAL ATMOSPHERE OF EUROPE IN 1600.

And now, before we follow Harvey's further career, let us pause for a moment to consider the intellectual atmosphere of Europe when he began his course at Padua. There had been the great revival of classical learning, followed not only by the Reformation and the consolidation of the Protestant States, but by the counter Reformation in the old Catholic countries. And there was a great ferment of free inquiry on philosophy, on the principles of government, on the polity of nations, the rights of the humbler folk and the conduct of life. The creation and the dissemination also of our greatest literature was then in progress in our own country.

England in spite of its insularity always, I believe, the most tolerant and open-minded of European countries, welcomed to permanent posts many learned men from other lands. Continental travel attracted many of our countrymen, and English scholars sought illumination in those days far more in Italy than in Germany or even in France.

It concerns us most of all to ask what branch of natural science chiefly attracted educated men. I have already referred to our president, William Gilbert, and his influence on Galileo. Galileo had been lecturing six years at Padua before Harvey went there. But we must bear in mind that though he had many ardent disciples both in Padua and Florence, yet he had to encounter formidable opposition as well as persecution, and both his discoveries and his doctrines were a long time in gaining acceptance. Harvey himself seems always somewhat timid about the findings of astronomy, and regards them as unprovable. Astrology was still widely accepted. Robert Boyle was not born till 1627 and the work of Torricelli and of Pascal was yet to come. The Royal Society held a few informal meetings in 1645, but did not receive its charter till 1662.

Thus, although at the end of Harvey's life physics had made great advances, at the time of which we now speak—viz., 1600—it was by no means a popular science. The chemistry of that time was dominated by unverifiable hypotheses, and it is quite what we should have expected that Harvey, according to Aubrey's statement, undervalued its exponents and spoke against it; it was much too vague and nebulous to suit Harvey.

We have, then, to turn from the physical to the biological sciences. The subject which not only engaged the energies of some of the greatest men of that generation, but also attracted extensively the interest of educated people, was human anatomy. Italy was the Mecca of anatomical students. At Padua itself there was a great tradition, for Vesalius, Falloppius, and Fabricius formed a brilliant succession of teachers. Dr. Caius, as we know, had not only studied with Vesalius, but had lived in the same house with him.

The Study of Human Anatomy.

But with regard to human anatomy as a subject of interest amongst educated people, let me read you a sentence or two from Evelyn's Diary, though they relate to a time a little later than this particular date. During the troublous years immediately preceding the Commonwealth, Evelyn travelled on the continent. Whilst at Padua he took out a short course of anatomy and physic. During a month he tells us that he saw a man, a woman, and a child dissected by Veslingius, the anatomical professor, with all the manual operations of the chirurgeon on the human body. He also purchased from Veslingius's assistant some rare tables of veins and nerves, and gave orders for a third to be prepared of the lungs, liver, and nervi sexti par and the gastric veins, which he sent to England and ultimately presented to the Royal Society. But before that presentation was actually made we find that Sir Charles Scarburgh, who succeeded Harvey as Lumleian lecturer, induced Evelyn to lend them for a time to our College for his own lectures. Scarburgh had been unable to induce Evelyn to present them to our College. They were given by the Royal Society to the British Museum and by the British Museum to the Hunterian Collection, and are now in the Royal College of Surgeons Museum. These tables are similar to those six preparations which were given to this College in 1823 by the Earl of Winchelsea. They were said to have been inherited from Harvey and to have been used by Harvey at his lectures. That, I think, is more than doubtful [1]

Thomas Hobbes, the philosopher, dissected in Paris along with his friend the many-sided physician William Petty, and at a later period Robert Boyle also dissected in Ireland under the same friendly guidance. Descartes studied human anatomy, dissected many brains, and repeated Harvey's experiments on the circulation for himself. The Port Royalists, following Descartes' lead, repeated many vivisection experiments on the circulation.

Fra Paolo Sarpi, the ecclesiastical statesman and adviser of the Venetian Republic, seems to have found time and opportunity to study anatomy to considerable purpose and even to make observations on the valves in veins. He was probably in touch with Fabricius, and we know that Padua partly depended on Venice for some of its anatomical material. Charles I. took the greatest interest in anatomy and in the numerous demonstrations, not only on the circulation of the blood, but on embryology, which Harvey gave him from time to time.

But it is important to note that although the great Italian anatomists had made enormous strides in the study of structure, their knowledge of function was lamentably small—in other words, physiology had not kept pace with anatomy. It has, indeed, been affirmed that physiology had not advanced since the time of Galen, and doubtless its inadequate progress was partly the consequence of the prevailing ignorance of physics and chemistry. But in the evolution of knowledge and of method the disproportionate study of human anatomy on its structural side must be credited with the development of observation, and so far it was a big step in the long and bitter struggle against the trammels of authority.

HARVEY AS PUPIL OF FABRICIUS.

That was the beginning of a momentous epoch in the history of human knowledge when on St. Luke's Day, 1600, a young Englishman, aged 22 years, rather under the average height, with raven hair, dark piercing eyes, rather sallow complexion, and with a keen, restless demeanour and rapid speech, enrolled himself amongst the pupils of the learned, laborious, and generous Fabricius. What was Harvey's exact attainment at this time in the details of anatomy and the technique of dissection we have no means of knowing. But we have reason to believe that even then he was by no means ill equipped with ancient learning; we know that he was a keen and accurate observer and an enthusiastic naturalist, and that he had a mind reflective as to the causes and relations of things, fertile in recognising resemblances and above all ready in making working hypotheses and in devising experiments which would more or less verify those hypotheses. It was in these latter qualities that Harvey's supremacy over his teachers and predecessors ultimately became so manifest. The addition of experiment to observation was vital and far-reaching. The exact relationship between teacher and pupil we do not know, but it must have been very intimate, as proved by all Harvey's references to Fabricius, not only in respect to the organs of circulation but also in respect to his observations and speculations on generation. These references are not merely respectful but reverent.

From the time when Vesalius described the valves of the heart the Italian anatomists had been keenly exercised on the valves in various parts of the vascular system, and Fabricius's discovery of the valves of the veins was as far back as 1574. But the scientific use of the imagination seems to have been dormant with these clever observers, and they were singularly inept in explaining the mechanism of the valves. Sir William Osler suggests that it was reflection on the mechanism of the valves of the veins which, at this early period of his career, set Harvey on the right tack in his great discovery, and there is a remark of Harvey's friend, Robert Boyle, which is not inconsistent with that suggestion. Boyle says that Harvey's observations on "contrivances similar to the valves, used in hydraulic engines for preventing counter-currents, led to his

[1] I suggest for consideration whether these tables may have come into the Winchelsea family not through Harvey but possibly through Sir John Finch (the son of Sir Heneage Finch), who was M.D. of Padua, and not only English Consul there, but Syndic of the University. He was admitted an extraordinary fellow of our College in 1660, and seems to have had for an anatomical pupil one Marchetti, who made "tables of veins, nerves and arteries five times more exact than are described in any author." Vide Dr. Edward Browne's letter to Sir Thomas Browne. Sir Thomas Browne's Works, vol. i., p. 91.

discovery of the circulation of the blood." Whether Boyle's remark refers to the period of study at Padua or not it is certain from the terms of his diploma in our possession that Harvey enormously impressed his teachers and examiners with his knowledge and ability.

HARVEY AS PHYSICIAN.

Harvey returned home in 1602 and after his incorporation as Doctor of Medicine at Cambridge he came to our College and submitted himself to examination as a "candidate," which title in those days I take to have been equivalent to our present designation of member. Dr. Norman Moore has found by consulting the "Annals" that Harvey was examined no less than four separate times between May, 1603, and August 4th, 1604, although he satisfied his examiners on each occasion. Moreover, of his contemporary candidates he was the last to be elected to the fellowship—viz., on May 16th, 1607—he being then 29. Whether in that early period of his connexion with this College he had any opponents we have no other means of ascertaining, but he seems to have had the support of the President, Dr. Atkins, when he applied for the post equivalent to what we should now call assistant physician at St. Bartholomew's Hospital, and especially that of Dr. Wilkinson, whom he assisted and after his death succeeded.

In the literature about Harvey there is nothing more interesting than Sir James Paget's Records drawn from the Annals of St. Bartholomew's Hospital. The relations between the Governors and Harvey are altogether honourable and creditable to both sides. I will only refer to the revised hospital regulations which were submitted by Harvey in 1633 and adopted. These rules show that in general medical policy Harvey was a strong conservative, and that he stoutly maintained the then existing supremacy of physicians over surgeons. The surgeon was not only obliged to consult the physician in all difficult cases and whenever inward physic was required, but he was not to be allowed to perform any major operation without the approbation and the direction of the physician. The surgeon was not only forbidden to give inward physic, but was required to declare to the physician what external remedies he applied in any given case. The surgeon had to attend the physician in his weekly consultations in the great hall to which the patients were brought, and where both matron and apothecary attended. In those days the surgeons had to visit their patients in the wards, and the physician, as a rule, only went to the wards when his patients could not be brought to the hall where most of the medical work was done.

During the 36 years, with certain intervals, that Harvey was connected with St. Bartholomew's Hospital he must have seen a great deal of disease amongst the London poor. But his post of Court physician, first to James I. and subsequently to Charles I., led to his having a considerable *clientèle* amongst the well-to-do. We know that some of the most eminent men of the time were his patients. Aubrey disparages his "therapeutic way," and maintains that although he was a great anatomist he was not much of a physician, and that after his great discovery was fully announced his practice waned.

Aubrey is a very inaccurate person, but this statement may have some truth in it. It is interesting to realise that the philistine is the same in every generation in his estimates of the merits of medical practitioners as in other estimates. If a doctor proves his greatness by some purely scientific discovery which has no immediate practical application, if he distinguishes himself in literature or art, the philistine shrugs his shoulders and says that is all very well, but that such a man should be a good practitioner is impossible. Let us, then, consider some of the evidences derived from Harvey's writings bearing on the subject of his clinical experience.

Clinical Illustrations from Harvey's Writings.

In his first disquisition to Riolanus Harvey refers to his unpublished MS. on Medical Anatomy or Anatomy in its relation to Medicine. This MS., then in Harvey's possession, has, alas! been lost, but it may yet be found. But his own references to this MS. are very relevant to our inquiry. In alluding to its contents Harvey says he—

> desires to relate from the many dissections of the bodies of persons diseased, worn out by serious and strange affections, how and in what way the internal organs were changed in their situation, size, structure, figure, consistency and other sensible qualities from their natural forms and appearances and in what various and remarkable ways they were affected.

I quote this long sentence because it embodies Harvey's ideal of the morbid anatomist and shows that he belonged to the true faith—viz., that the best physicians are first of all good morbid anatomists.

In this letter his illustrations are, as might be expected, chiefly drawn from the diseases of the circulatory system; he gives interesting references to aneurysms, apoplexies, and calcified arteries. In more than one place he refers to the small radial pulse on the distal side of an aneurysm of the neck. He recognised that empyema might ulcerate into the lungs and discharge through the bronchi.

In his work on generation, which contains many clinical illustrations, there is a careful analytical description of the case of Lord Montgomery's son, who had an exposed heart left bare after a severe suppurating injury to the chest, and his report of the post-mortem examination of Thomas Parr is a sample of the thorough way in which he made his autopsies.

In his second letter to Riolanus he shows how wide was his acquaintance with local disturbances of circulation which he had discussed at length in the lost Medical Observations. There was one disease which was common in his contemporaries and of which he had abundant experience in his own person—viz., gout. Whether he was permanently crippled is, I think, doubtful, but that he suffered severe pain, especially in his lower limbs, is quite certain. Heberden sneers at the methods which Harvey adopted to relieve what we may probably regard as attacks of localised gouty hyperæmia. But Harvey's plan of plunging his feet into a pail of cold water seems to have been justified by the results, and Heberden has the candour to admit that he lived till 80, and does not appear to have died from gout but from old age. This mode of treatment shows not only Harvey's courage, but his independence of conventional dogmas. In our own times we have learnt that the local application of cold in febrile and hyperæmic states is not the dangerous thing it was once supposed to be.

In Harvey's Prelectiones there are many clinical observations introduced by way of illustration. In his valuable introduction Dr. Norman Moore points out that Harvey was "familiar with scarlatinal desquamation; he had noted the enlarged liver in those who died after long suppuration and the shrunken liver in cirrhosis. The varying appearances of gall-stones and the common shape of large renal calculi were well known to him, and he describes pericarditis and its symptoms from his own observation."

It is quite true that Harvey says very little about drugs in any of his memoirs. That is not exceptional in physicians who are distinguished as morbid anatomists. One would like to believe that when the apothecaries of the time disparaged his "bills" (as prescriptions were then called), they may have been too short and too simple to please the apothecaries. There is a nice report on the case of Prince Maurice when Harvey was with the King at Oxford, in which it is stated about Harvey and his colleague Edmund Smith that the "doctors doe resolve to give very little physic, only a regular dyett and cordyall antidotes." It is significantly added that Prince Maurice did well.

But I think I have noticed occasionally that when a morbid anatomist ventures into the realm of therapeutics he may show an immense confidence in some particular preparation, and it is not altogether an exceptional incident that in a letter to his friend Hamey which we possess, concerning the ailment of a poor woman in whom they were both interested, Harvey extolled the therapeutic value of the heel-bone of the deer. Perhaps he had found it a useful way of administering phosphate of lime. But whether he gave many drugs or few, Harvey had confidence in the relief or removal of pain by "the detraction of blood, the application of cupping glasses, or the compression of an artery which leads to a part." He also used cupping glasses for the relief of asthma.

In his work on generation Harvey shows practical acquaintance with both midwifery and gynæcology. He recognised the dangers of retained secretions in the body of the uterus, and showed courage and decision in dilating the cervix and in some cases in the employment of intra-uterine injections. He had carefully studied cancer of the uterus. I commend to my gynæcological brethren a remark which

shows Harvey's shrewdness. Speaking of certain uterine troubles he says:—

Women are peculiarly liable to these accidents, especially those among them who lead a luxurious life or whose health is naturally weak or who easily fall into disorders. Country-women and those accustomed to a life of labour do not become dangerously ill on such small grounds.

But Harvey was not unacquainted with the surgery of his day. In this same mine of clinical experience, the work on generation, will be found reference to cases of large sarcoceles, the treatment of which he had initiated by tying the afferent artery so as to limit the blood-supply. He subsequently removed the tumour by extirpation with the knife or the searing-iron.

Perhaps Harvey's conservatism as regards the relative status in his time of physicians and surgeons and his daring to have an independent opinion on surgical cases and even performing some operations (for in his will you will remember he left his surgical instruments to his friend Scarburgh) may have roused the antipathy of the Barbers' and Surgeons' Company. At all events, they endeavoured to convict him of ill-practice in the case of an alleged fracture of the skull. There was no allegation of operation on his part, but only of erroneous opinion. But I do not gather that the Barbers' and Surgeons' Company supported their condemnation by any post-mortem evidence.

I think we may rest content that our Harvey, who was universally admitted to be a great anatomist and naturalist, was also an experienced pathologist, a learned physician, and he had the qualifications of a good all-round practitioner.

HARVEY AS COURT PHYSICIAN: CONTINENTAL JOURNEYS.

Harvey's Court duties were by no means strictly limited to medicine. As physician to the Court he was instructed to take two long and important continental journeys. The first of these was in 1630, when he accompanied the young Duke of Lennox on a rather prolonged tour, in which he was obliged to dodge the plague on several occasions, and was greatly impressed with the impoverishment of the countries through which they travelled.

The second continental journey made at the Royal Command was in 1636, when Harvey accompanied Thomas, Earl of Arundel, the Lord High Marshal, on an embassy to Vienna and Ratisbon, which was mainly concerned with efforts to secure the restoration of the King's nephew, the young Prince Palatine, to his proper status. About three years ago I had the good fortune to secure for this College 11 of Harvey's letters referring to a painful episode of this particular journey. Harvey's writing is very hard to read. It is the writing of a man of terse expression and who had no time to waste. The contractions are appalling. These letters are not quite so difficult as the few others which are extant, and they show that when he took pains he could make a tolerable script as well as express himself forcibly. They were written to Harvey's friend, Basil Lord Feilding, the eldest son of Lord Denbigh. Feilding was English ambassador at Venice, and it would appear had invited Harvey to visit him. Harvey looked forward to this visit with great delight.

Account of Second Continental Journey.

There exist in the Clarendon State papers fairly complete reports of this embassy on the official side, forwarded by Lord Arundel and his staff. It may interest you to follow Harvey's steps on this journey. Lord Arundel's reports are addressed to Sir Francis Windebank, one of the Secretaries of State for Foreign Affairs. The first is from Utrecht, in which Arundel informs Windebank that he has left his son at Leyden suffering from a stomach attack, but under the care of Dr. Harvey. They soon rejoined the party and we next hear from Arundel at Cologne, where he says he has been "this evening at the Jesuists fair new church and College where they used me with all civility. I found in the College little Dr. Harvey who means to convert them."

I think it is more than likely that this polemic related not to theology but to Harvey's doctrine on the circulation, for at the next stage, Nuremberg, Harvey writes a very courteous letter to Dr. Hoffmann in which he tries to disabuse his mind of certain misconceptions, and offers to give him a demonstration of the circulation. This letter is included in Harvey's published works, and shows that along with his scrupulous courtesy he could usefully blend a little elegant sarcasm, for he begs Hoffmann, if he won't come to a demonstration or investigate by his own dissection, that he will not vilipend the industry of others nor charge it to them as a crime. "Do not derogate," he says, "from the faith of an honest man not altogether foolish nor insane who has had experience in such matters for a long series of years."

The first and second of Harvey's letters to Lord Feilding relating to this journey (now in the possession of the College) were written from Lintz, to which the Ambassador's party had gone on leaving Nuremberg. Here the first meeting with the Emperor Ferdinand took place. Harvey says he accompanied the Emperor on some hunting excursions. He speaks of him as a pious, good man, desirous of all love, quietness, peace, and justice! He refers to the impoverishment of the country by the Thirty Years' War and to the licence and oppression and anarchy which prevailed in Germany. Nevertheless, they had joined in a feast given by the Count of Milan, "the chief major-domo of his Majestie, where they drunk hard and had many expressions and many good wishes." There are ominous references to the plague and the fear of it.

The next move is to Vienna, where Harvey sees the Queen of Hungary and praises her two fine little babies. Then they go to Ratisbon where they have to await the assemblage of the Diet of the German Empire, which somewhat shadowy and dilatory body will have to discuss the questions respecting the young Prince Palatine's claims. From the Clarendon State papers we learn that everybody in Lord Arundel's mission was excessively tired by the long delay. Harvey seems to have been terribly bored and to have besought Lord Arundel to let him go to Italy during the vacancy, as he styles the waiting time. In one of the Clarendon despatches there is a reference to honest little Harvey whom the Earl is sending to Italy about some pictures for His Majesty.

This opens up a very interesting little bypath upon which other correspondence of Lord Feilding's throws additional light. Lord Arundel, as we know, was one of the great English virtuosos of that day and was the first to collect objects of art from Italy and elsewhere. His name is chiefly associated with the collection of Greek and Roman marbles which was ultimately secured for the University of Oxford by the mediatory efforts of John Evelyn. But he was a collector of pictures also. In some of the Feilding letters there are references to the pictures which at various times Feilding acquired for the King's collection, and the Marquis of Hamilton writes to Feilding on the same subject in which he delicately hints that Lord Arundel might take the opportunity of feathering his own nest and that he might even forestall Feilding in some of his bargains.

Detention in Lazaretto at Treviso.

At all events the invitation to Harvey to visit Lord Feilding at Venice may well have led to the extemporised mission which was entrusted to Harvey by Lord Arundel. But poor Harvey little dreamed of what was in store for him. He doubtless left Ratisbon in high spirits at his escape from the weary diplomatic tedium so trying to his active spirit. He was armed with *visé* to his passport and commendatory letters, but when having crossed the boundary of the Venetian territory he arrived at Treviso he writes to Lord Feilding that he was unjustly affronted, being stayed and commanded by the podesta to go into the lazaretto without any cause or suspicion alleged. It is clear that they were terribly and perhaps unreasonably afraid of the plague. Harvey produced his visé'd passport and recommendations from the King of Great Britain, from the Emperor, and from Lord Arundel, but the podesta would not look at them. Harvey refused to go to the lazaretto for fear of the infected persons who had been sent there before, and he ultimately elected to stay in the open fields. He scribbles his letter on the grass in the field and begs Lord Feilding to procure his release with all expedition.

He seems to have subsequently arranged to sleep in a poor open garden-house and to lie upon straw, but was by force and threatening of muskets compelled to go into the lazaretto into a very nasty room where the vetturin and his two servants and saddles lay!

The podesta, probably as the result of Lord Feilding's complaint, in three days' time sent a coach offering to take Harvey back to the poor garden-house (where he had been

before). Harvey did not conceal his irritation and indignantly refused to accept anything whatever from the town authorities, least of all a bed which he believed would have been an infected one, so he elects to sleep on straw. Subsequently the Senate of Venice sent him a message that he must stay where he was till further orders, without specifying the time. Meanwhile poor Harvey, having bad food and great exposure, had contracted sciatica. He seems to have been kept between a fortnight and three weeks, but we do not know the exact date or method of his release. He sent on his letters to Lord Feilding, and though he did not stay long in Venice he seems to have had a good time there, and then he went to Florence, where he enjoyed the hospitality of the Grand Duke, who lavished everything upon him that heart could wish.

Harvey's last letter to Lord Feilding was to announce his return to Ratisbon in November so as to be ready to accompany Lord Arundel on his return to England, his mission having turned out rather a fiasco.

It has hitherto escaped notice, but I find in the Clarendon Papers a letter from Sir John Borough in which it is stated that they were aware at Ratisbon that Dr. Harvey had been kept in quarantine at Treviso, "being not as yet, for aught we hear, released." His return to Ratisbon may have been somewhat surprising. A perusal of Harvey's letters and of the State Papers gives us a poor opinion of the estimation in which Englishmen were held in Charles the First's time in foreign lands, and we may be sure that Cromwell would not have brooked such scant consideration to any English subject during his rule.

Between the time of Harvey's leaving Florence and going back to Ratisbon we must, I think, intercalate his visit to Rome, where, under the hospitable roof of the English College, he dined with one who became a very staunch friend. This was Dr. Ent, who, in the evening of Harvey's life, secured for publication his work on Generation. The alleged visit to Rome with Dr. Ent, which Aubrey mentions, has been shown by Dr. Munk to be one of his many inaccuracies. The joint visit was the one just mentioned; it was in October, 1636. Harvey was back in London at the end of the year. He doubtless made other visits to Italy and probably to Padua.

THE CIVIL WAR: HARVEY AT OXFORD.

As Court physician Harvey accompanied the King for his Scotch Coronation. It is eminently characteristic that the chief interest for Harvey was not the ceremony nor the theological disputes, but his own visit to the Bass Rock in order to find out some points with regard to the Solan goose which then, as now, congregated on that island in great numbers. He probably also accompanied the King in his abortive warlike journey to Berwick in 1639 and perhaps again in 1640, but there do not appear to have been any important questions of natural history to be solved in those journeys, and I find no reference to them in Harvey's papers. The clouds were gathering for the Civil War, and Harvey's official association with the King rendered him *persona ingrata* not only to the Parliamentarians in the House of Commons, who tried to oust him from St. Bartholomew's Hospital, but to a mob who sacked and plundered his official lodgings in Whitehall. It is somewhat piquant and characteristic that Harvey, referring to this outrage, says the cause of his sorrow is that

> "certain rapacious hands stripped not only my house of its furniture, but what is a subject of far greater regret with me, my enemies abstracted from my museum the fruits of many years of toil." "Whence it has come to pass that many observations, particularly on the generation of insects, have perished with detriment, I venture to say, to the republic of letters."

It has been assumed that Harvey's "Medical Observations," as well as some other papers, were destroyed by this mob. But Sir George Paget has drawn attention to the fact that Harvey himself speaks of these same "Medical Observations" being in his possession at the time when he writes, many years afterwards, his first letter to Riolanus.

In regard to the historic incident of Harvey looking after the two young princes at the fringe of the battlefield of Edgehill, it is interesting to remember that his friend Lord Feilding had been removed from his Ambassador's post at Venice and was fighting on the Parliamentary side, whilst the Earl of Denbigh (Lord Feilding's father) was fighting for the King. There must have been many of Harvey's friends on both sides of the great struggle, but it is noteworthy that throughout the four years, from 1642 to 1646, that Harvey was with the King at Oxford, there is no evidence that he took any part in political affairs, and there is no report of any utterance of greater resentment than is expressed in the one just quoted concerning his natural history collection.

Nothing daunted by the limitations of his surroundings at Oxford, he goes to visit his friend Bathurst at Trinity College and conducts with him daily observations on the development of the hen's egg. He was incorporated a Doctor of Medicine of Oxford, and during the last year was appointed Warden of Merton College. His brief opening address to the fellows, appealing to them to cultivate harmonious friendship amongst themselves and pledging himself for the development of the welfare of the College, is quite in harmony with Harvey's subsequent utterances at the College of Physicians. One interesting experience at Merton was his welcome to Scarburgh, who had been expelled from his fellowship at Harvey's old college in Cambridge on account of his Royalist principles. Scarburgh seems to have been not unnaturally interested in the lively military expeditions around Oxford of Prince Rupert and his fellow officers. Harvey said to him, "Prithee, leave off thy gunning and stay here and I will bring thee to practice." He probably recognised Scarburgh's mathematical abilities and foresaw a great future for him, and Scarburgh is said to have helped Harvey in some of his investigations.

In Clarendon's "History of the Rebellion" some of the most attractive pages are the character sketches of the chief men on both sides, and it is significant that Harvey finds no place; indeed, there is not a single mention of him in the whole of the work. Clarendon seems not to have concerned himself in writing his History with a single person who took no active political or military part in the great struggle. It seems remarkable in view of Harvey's long personal devotion to Charles I. in prosperous as well as in adverse days that when the surrender came he left him, and it is doubtful if he ever saw him again. But in fairness we must remember that Charles's movements, after the surrender, up and down the country were not under his own control, and very shortly the access of particular adherents and attendants was regulated, and Harvey may not have been permitted to join him, even if it were desired. At all events, he retired a saddened man of 68 to the quiet and rest provided him by his relatives in London and its neighbourhood, and his rich and influential merchant brothers may well have secured him safety and protection in his retirement.

HARVEY'S GREAT DISCOVERY.

I can well believe that a friendly critic might say, You have brought this discursive review of Harvey's career to its last stage and have said very little about his great discovery. To which I reply, That great discovery is inextricably linked with Harvey's long period of association with the College of Physicians, and to some points in that long period I now ask your attention.

It is probable that from 1602 onwards Harvey was working at his subject, and from 1609, when he was formally elected physician to St. Bartholomew's Hospital, he must have gradually acquired a reputation as an anatomist as well as a physician. In 1615, being then 37, he was appointed Lumleian lecturer to this College, a post which he held with certain inevitable absences until 1656, the year before he died. The Prelectiones which bear the date of 1616 are really the lecture notes for the first anatomical course which he delivered. His introduction, with its detailed categories of anatomical study, is interesting as a logical academic statement, but the practical instructions which Harvey laid down for his own guidance in method seem to me the last word as to the proper objects and limits of oral teaching and demonstration, and are a model to be utilised by every medical teacher of our own time. The special value of this MS., which deals chiefly with the viscera, is that we have here Harvey's first account of the circulation of the blood, the full exposition of which he gave in his printed book in 1628. For these 12 years Harvey had expounded his doctrines to our predecessors, and it is significant that from within this College there was no criticism or opposition to the full acceptance of those doctrines with the solitary exception of one licentiate, a certain Dr. Primrose, who was rather an abject pupil and follower of Riolanus, the anatomical professor at Paris. Harvey demolished the

master Riolanus in the two disquisitions addressed to him, and the pupil needs no further consideration.

I need not dwell on Harvey's masterpiece, so brief, so terse, and so convincing, a model for all time of inductive reasoning. Let us never forget the two supreme doctrines which he established and which neither his predecessors nor his contemporaries had understood. (1) The circulation of blood from heart through arteries and back through the veins to the heart again. The pulmonary circulation, it is true, had been more or less apprehended, but it was reserved to Harvey to establish the true nature of the systemic circulation and to give the *coup de grâce* to the ebb and flow movement of the blood current, now this way, now that, which was the accepted explanation up to his time. (2) The muscular contraction of the ventricles, the real motive force of the circulation which had been conspicuously ignored and misinterpreted previously.

It is quite true that Harvey's view of the respiratory function was inadequate. For him it was summed up in cooling and ventilation, he never thoroughly faced the difference between arterial and venous blood, and it is doubtful if the meaning of oxidation had taken any definite shape in his scheme of life. But the day of chemistry was not yet, though it was not far off, and it was impossible for him without the help of the microscope to bridge over the space between the arteries and the veins. How he would have leapt for joy if Malpighi had only demonstrated the existence of the capillaries within Harvey's lifetime.

What was Harvey's method? It is certain that he had a wide and thorough acquaintance with the work of his predecessors, but he differs from them all in the courage and independence with which he really begins his work by ascertaining by his own senses what are the anatomical facts untrammelled by the statements of authority. He follows up his human anatomy by comparative studies of the circulatory organs of every animal that he can obtain. Then he reflects on the simplest explanation of the anatomical mechanism before him. Finally, he devises experiments, vivisectional and otherwise, to test and verify his hypotheses.

The question has been asked again and again, What was the relation between Bacon and Harvey? Bacon in his "Novum Organum," which was published in 1620, makes no reference to Harvey's discovery. Harvey's book appeared in 1628 and Bacon died in 1626, but one would have supposed that Bacon might have heard the account of Harvey's discovery during the four years which had elapsed since he first expounded it in the College. On the other hand, Sir Samuel Wilks is not, I think, correct when he says that Harvey had not read Bacon's works and owed nothing to Bacon. In the twenty-fifth exercise of Harvey's book on generation there is a sentence in which he proposes to review and analyse some of his previous results, and he says: "Wherefore I think it advisable here to state what fruits may follow our industry and in the words of the learned Lord Verulam to enter upon our second vintage."

If Aubrey is to be credited, Harvey "esteemed Bacon for his wit and style but would not allow him to be a great philosopher." "He writes philosophy like a Lord Chancellor," Harvey says, "but I have cured him." I think probably in spite of Bacon's many-sided enlightenment Harvey looked upon him as an academic litterateur who had no claims to eminence in practical investigation, and it may well be that Bacon's deep-rooted antagonism to Aristotle, which dated from the time when he was a student at the University, may have roused Harvey's distrust. "A man of genius lights his own fire," said John Foster, and in spite of all that has been said about every man's work being more or less dependent upon his environment and the heritage of the past, I do not think we are wrong in claiming that Harvey was a creative genius.

WORK ON GENERATION.

The work on generation has been spoken of as Harvey's aftermath, but in many ways it is more interesting than his *magnum opus* on the circulation, and I do not think it has received adequate appreciation from my distinguished predecessors. It tells us a great deal incidentally about the world experiences of a long and chequered career, and it shows Harvey to us on the speculative and contemplative side. The anatomical observations are, of course, circumscribed by the absence of microscopical methods, though it must be admitted that Harvey used such magnifying lenses as he possessed to some purpose. There are some erroneous conclusions but not bad ones.

The introductions on the manner and order of acquiring knowledge and on the method of study are, I submit, masterpieces of lucid exposition. This work is interesting as showing Harvey's own estimate of his teachers.

"Foremost of all among the ancients," he says, "I follow Aristotle: among the moderns Fabricius of Aquapendente, the former as my leader the latter as my informant of the way." "For even as they who discover new lands and first set foot on foreign shores are wont to give them new names which mostly descend to posterity, so also do the discoverers of things and with perfect propriety give names to their discoveries." "And now I seem to hear Galen admonishing us that we should best agree about the things and not dispute greatly the words."

But with all Harvey's reverence for Aristotle's philosophy I believe he respected him most of all as a great naturalist and observer, and it is noteworthy that for him as well as for Fabricius and for Galen his reverence never prevented Harvey from pointing out their blunders in anatomical observation as well as in the deductions drawn therefrom. For example, in his fourteenth exercise Harvey goes so far as to suggest that on one point Aristotle had not himself seen the things he described, but received them second-hand from another observer, and that the periods were not given rightly.

HARVEY'S LATER YEARS: RELATIONS WITH THE COLLEGE OF PHYSICIANS.

As I have already indicated, from 1646 to 1657 his Court duties ended, his private practice relinquished, Harvey lived henceforward in retirement, first with one of his merchant brothers then with another in London or in the country near by. His brothers were substantial and influential people. In earlier years, when their father had left Kent and had come to live in London, Fuller tells us that—

> As the sons got great estates they made their father treasurer thereof, who, being as skilful to purchase land as they to gain money, kept, employed, and improved their gainings to their great advantage; so that he survived to be the meanest of them of far greater Estate than himself.

In later years his brother Eliab looked after Harvey's money affairs, and he had no anxieties. We know little, alas, of Harvey's married life, but I think it must have been a happy one. His wife was the daughter of a cultivated and eminent physician, Dr. Launcelot Browne. They were married at the very outset of Harvey's professional career, and the wife died probably during the time Harvey was with the King at Oxford. The references in Harvey's will to his dear deceased loving wife show his solicitude to perpetuate her wishes, and his gracious desire that certain of his benefactions should be regarded as from her, though she had long since passed away, manifest his tender affection for her. It is clear that his sisters-in-law and all their respective households were unceasing in their care and solicitude, and the detailed and thoughtful remembrance in his will of all his relatives and their servants and of many poor folk is very touching. He was childless, but his care for his nephews and nieces was very marked.

This College was the chief interest of his old age. Besides being Lumleian lecturer, he had been at different periods Censor, Treasurer, Elect, and finally, when he graciously declined the proffered presidency, Councillor of the College. But the benefactions which I enumerated at the outset belong to the eventide of his life, from 1651 to 1657, and he seemed never to be able to give enough.

It is interesting to think of the devotion and long duration of his friendships. In old days he had nominated Dr. Edmund Smith as his substitute at St. Bartholomew's. Edmund Smith was with Harvey at Oxford, and now when Harvey was building at his own expense the costly and beautiful addition to the College edifice, it was Edmund Smith who really superintended the whole business for him, and whose name, at Harvey's desire, along with that of Dr. Prujean, the President, appeared on the commemoration inscription. I have referred to the brotherly attachment of Harvey, Ent, and Scarburgh. Harvey's discoveries were at length warmly accepted by foreign universities and by foreign anatomists and scholars, notably by Slegel, Bartholin, and Descartes. Some of these foreign anatomists stoutly defended Harvey's doctrines against the few remaining obscurantists who were still in opposition. His friend,

Thomas Hobbes, said that Harvey was the only man whom he knew that had lived to see his own doctrine established in his lifetime.

Abraham Cowley's poetry is seldom read in these days, but his two poems on Harvey, based on intimate knowledge of the man and of his work, are full of genuine feeling and devotion. But the recognition most precious to him was the homage of this College. Fuller says of him he was not only Doctor Medicinæ but Doctor Medicorum. The homage of the College was shown during his lifetime by erecting a statue of Harvey. It was further shown by the large gathering of fellows who followed his remains beyond the City walls in the first part of his funeral. How many of them gathered round his tomb at Hempstead in Essex we do not know. The homage of his successors in this College was shown in 1883 by the reverent removal of his remains from the damaged outer vault where they lay to a sarcophagus in the chapel above.

THE WORK AND CHARACTER OF HARVEY.

Whilst we of this generation render our homage to our great benefactor, let us in a few words picture to ourselves the outstanding features of his work and character. First observe his pursuit of truth for its own sake, even though a complete solution were not forthcoming and quite independently of any ulterior benefit that might ensue. His discovery was one of those which, in Bacon's phrase, might fairly be called "light-bearing" rather than "fruit-yielding."

Amongst the objections which Harvey had again and again to combat in his work on the circulation was the ever-recurring question, Cui bono? Listen to his reply:—

I own I am of opinion that our first duty is to enquire whether the thing be or not, before asking wherefore it is. ..... Meantime I would only ask how many things we admit in physiology, pathology, and therapeutics the causes of which are unknown to us? Whoever therefore sets himself in opposition to the circulation because if it be acknowledged he cannot account for a variety of medical opinions, nor in the treatment of diseases, give satisfactory reasons for the phenomena that appear or who regards it as in some sort criminal to call in question doctrines that have descended through a long succession of ages; to all of these I reply that the facts cognisable by the senses wait upon no opinions, and that the works of Nature bow to no antiquity, for, indeed, there is nothing either more ancient or of higher authority than Nature.

With what labour (he says) do we attain to the hidden things of truth when we take the averments of our senses as the guide which God has given us for attaining to a knowledge of his works, avoiding that specious path on which the eyesight is dazzled with the brilliancy of mere reasoning, and so many are led to wrong conclusions to probabilities only and too frequently to sophistical conclusions on things.

The doctrine of "spirits" dominated the physics and the physiology of that time. Harvey says—

As it is still a question what they are, how extant in the body, of what consistency, whether separate and distinct from the blood and solids or mingled with these—upon each and all of these points there are so many and such conflicting opinions that it is not wonderful that "the spirits," whose nature is thus left so wholly ambiguous, should serve as the common subterfuge of ignorance.

Persons of limited information when they are at a loss to assign a cause for anything, commonly reply that it is done by the spirits, and so they bring the spirits into play upon all occasions, even as indifferent poets are always thrusting the gods upon the stage as a means of unravelling the plot and bringing about the catastrophe.

Harvey's demolition of the doctrine of "spirits" marks an epoch in the history of science. Long sentences were the fashion of the time, but Harvey makes his meaning plain. He was keenly alive to the bondage of names and phrases. He was anxious to get the *knowledge of things* and not greatly concerned about names. He maintains that our business is not so much to inquire what a word properly signifies as how it is commonly understood. His writings are lit up by quaint and homely similes, but they are free from the pedantry of his time. Sir Clifford Allbutt thinks he was lacking in imagination. Perhaps that is so, and I think the result is that although some of his conclusions are incomplete and inadequate they contain remarkably little that is erroneous.

And about his character: there is in the opening sentences of his will a humble and definite statement of his christian faith, and in his book on generation he expresses his conviction of the immanence of God. "He takes," Harvey says, "the right and pious view of the matter who derives all generation from the same eternal and omnipotent Deity at whose nod the universe itself depends."

Aubrey says that Harvey, like his brothers, was choleric. You may say that the Treviso letters support that assertion, but remember he had great provocation, and he was a gouty subject. At all events, his choleric temper did not interfere with his courtesy and modesty in controversy nor with generous appreciation of the work of his contemporaries. Harvey's power of concentration and detachment in biological observation in adverse surroundings was amazing. He was patient and laborious in his investigations and reluctant to make any premature announcement of his conclusions. He was content to wait the judgment of time and enlightenment. He grew more and more fond of contemplation and even of solitude at times, because it gave him greater opportunity for contemplation. His love of family and of friends has been already noted, and to this may fitly be added his unfailing kindness to young men and readiness to advise them as to travel and books and his willingness to take trouble on their behalf.

The concluding parts of his last letters are very touching. The nearer he approaches the Great Divide the more he craves for the abiding remembrance and the affection of his correspondents. It is not only the old man eloquent, but the old man mellowed and gentle.

And now in these severe and strenuous days, when we trust that the "winter of our discontent" is soon to pass away, we recall once again the last exhortation of our great master. He bids us "ever to search out and study the secrets of Nature by way of experiment, and for the honour of our profession to continue in mutual love and affection amongst ourselves."

PENETRATING WOUNDS OF THE ABDOMEN.[1]

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GUNSHOT wounds of the abdomen form a subject of considerable importance, for there has been a decided difference of opinion as to the best line of treatment; some strongly urge operative measures whenever possible, and others believe that for most cases expectant treatment offers the best prospects. It may be safely said that extreme views in either direction will prove to be wrong, but the value of operative treatment under proper conditions is becoming increasingly obvious.

It is clearly an advantage that we should be able to discuss questions such as these before we have to deal with cases in large numbers out here, and the practical point to be borne in mind is, how shall we treat these injuries under the conditions which exist around Salonika. The only considerable experience of abdominal injuries is that gained in France, and in framing our conclusions we must draw largely from that experience, remembering that the conditions here may necessarily fall short of the very favourable conditions under which surgery is done in France at the present time.

It has been suggested that there is a tendency to attach undue importance to these injuries, considering that they form only a small proportion of the total number of wounds. Anyone, however, who has come into close contact with numbers of men recently wounded cannot but recognise the importance of the abdominal group; the cases owe this importance to their urgency, their high mortality, and to the fact that many lives may be saved by appropriate treatment.

Before discussing the relative merits of the different lines of treatment it is essential that the high mortality of penetrating abdominal wounds should be realised. The multiplicity and severity of the lesions make a high mortality inevitable whatever treatment be adopted; this fact is quickly grasped when one sees the extent of the injuries as revealed on the operating table or in the post-mortem tent. Available statistics all emphasise the same fact. It is obviously difficult to get complete statistics, but the following are given for what they are worth. They are based on figures collected by Colonel Cuthbert Wallace, C.M.G., consulting surgeon to the

[1] A paper read before the British Medical Society, Salonika.

Army, and those worked out in the unit to which I was subsequently attached. They refer to results during the first six months of 1915, and attempt to show approximately what proportion of patients with penetrating abdominal wounds reached England, *before operative treatment became general.*

Of 100 abdominal cases with penetrating and non-penetrating wounds admitted into field ambulances 30 died in the field ambulances, and these were presumably cases of penetrating wounds; the remaining 70 were taken to casualty clearing stations, where half of them, that is 35, were found to be penetrating cases. Of these, 18 died in the clearing stations and 17 were sent to the base. As far as can be judged from the information available the mortality of these cases in the base hospitals at that time was at least 35 per cent.; this means that of the 17 cases reaching the base at least 6 would die, leaving 11 to reach England. To sum up, it would appear that in 100 cases of abdominal wounds, 65 were instances of penetrating wounds—namely, the 30 that died in the field ambulances and the 35 diagnosed as penetrating cases in the clearing stations; 11 of these ultimately reached England. In other words, the mortality up to that stage was about 83 per cent.

Before coming to present-time conditions I will briefly refer to the treatment of these injuries before the present war. In civil life, of course, operation is the general rule, provided that the patient's condition allows it; all surgeons recognise that a man in civil life shot through the abdomen will usually have his best chance of recovery if he is operated upon. As regards the South African War it is difficult to get definite facts. Everyone is agreed that operations did badly, though it is not true that all ended fatally. As regards the penetrating wounds which were not operated upon one cannot but believe that most of them were fatal also, for rifle-bullet wounds of the abdomen are very fatal in the present war and in civil life, and presumably similar results occurred in South Africa. Surgeon-General Sir G. H. Makins, K.C.M.G., C.B., for instance, says that he saw no case recover in which the small intestine was certainly injured. The practical point is that operative treatment for these injuries failed in South Africa. The conditions were unfavourable; cases seldom reached the surgeon in their early stages; moreover, abdominal surgery was then 15 years younger than it is now.

In the early part of this war surgical work was influenced by the South African traditions, which naturally led most surgeons to believe that expectant treatment would give better results than operative treatment. Apart from this the conditions of warfare obtaining in the initial stages of the war were quite unsuitable for early operative treatment, and such work as was done was not a success. The cases were usually only operated upon in their later stages, and this fact, combined with the inevitable high mortality of abdominal wounds and the unfavourable experience of South Africa, discouraged operations.

In the spring of last year, however, when siege warfare had become established, operative treatment was restarted, and every facility that could be devised was supplied. Clearing stations were a short distance behind the firing line, the operating theatres were fully equipped for abdominal work, and arrangements were made that abdominal cases should be at once transported to these clearing stations.

Coming now to my personal experiences, I commenced work on these cases early in July of last year, being stationed at a casualty clearing station in France commanded by Lieutenant-Colonel V. J. Crawford, D.S.O. Here I had the pleasure of working with Captain J. B. Haycraft, the surgical specialist to the unit. As a rule, we took the abdominal cases admitted into the hospital alternately and assisted each other. In this unit the main operating theatre was in a room in a château; a large landing outside this room was boarded in and converted into a second theatre, which we reserved for the septic cases; in addition to this there were two operating tents. The facilities for abdominal work were excellent, and these we owed to Surgeon-General W. G. MacPherson, C.B., C.M.G., K.H.P., D.M.S. of the Army to which we were attached. In the first place the surgical equipment in that clearing station was as good as that of a civil hospital in England; anything that we needed for abdominal work was supplied at once. Secondly, we were greatly helped by an order that abdominal cases were to be sent at once to the nearest casualty clearing station, provided that the patients were fit to travel. The proviso must be noted, for it was clearly for the medical officers of the field ambulances to use their discretion as to whether or not a patient was fit for transport. As a result of this order we got the majority of our cases within a short time of their injuries, often within 1½ to 3 hours.

When I started work in this unit I had the advantage of discussing the principles of treatment with Colonel Cuthbert Wallace. At first we were rather inclined to select cases for operation, watching those in which there was thought to be a fair chance of recovery under expectant treatment; but we found that most of those treated expectantly got into difficulties and usually died, and so we were led to operate upon most cases on principle as early as possible.

There were certain groups in which operation was clearly impossible or inadvisable.

1. Cases moribund on arrival; a proportion of cases reaching the clearing hospitals are unfortunately beyond surgical help. In some of these cases the condition may be so improved by infusion, warmth, and other methods of stimulation that operation becomes possible later on.

2. In injuries of the liver and kidneys when one felt sure that the hollow viscera had escaped, especially in rifle-bullet wounds, operation usually seemed contraindicated.

3. In the diaphragmatic group, cases in which the projectile appeared to have traversed the top of the abdomen, the diaphragm, and the lower part of the chest, expectant treatment is usually the wisest plan. Most of these patients have hæmothorax; the abdominal lesions are difficult of access, and in all ways such cases are unfavourable for operative work.

4. There were two cases in which rifle bullets had apparently traversed the lower half of the abdomen, without producing abdominal symptoms or signs. As the physical condition in each case was perfectly normal operation was not performed, and these cases were evidently examples of a small group of fortunate cases in which the hollow viscera escaped injury. Reference to this will be made better.

The routine procedure adopted for these abdominal cases was as follows. On admission the patients were put comfortably to bed, warmed with plenty of blankets and hot-water bottles, given saline solution subcutaneously or by the rectum, and morphia if in pain. The majority were suffering from shock and the effects of hæmorrhage; these were kept for two, four, or six hours until they were better, and operation was not performed unless the radial pulse was of fair volume and its rate under 140. We were convinced that it is not advisable to operate immediately on patients with rapid pulse-rates; they nearly always require much repair work, and the prospects of success are decidedly better if time is spent in attempting to improve their general condition. Some patients presented few or no signs of shock, and these were operated upon as early as possible. In doubtful cases, when it was uncertain whether the peritoneal cavity had been penetrated or not, our rule was to explore the wound. By doing this we several times discovered intestinal injuries at an early stage before there were any external signs of their existence.

The Operation.

For wounds of the lower abdomen we found it a considerable help to have the pelvis raised, the best position being about 30° from the horizontal; for efficient treatment of bladder injuries this was essential. The incision was usually placed vertically in or near the mid-line, but of course it varied according to circumstances; the important point was that it should be sufficiently large to allow quick and free access to the injured parts.

After the opening of the peritoneal cavity the first step was to clean out the blood and other fluid, especially from the pelvis, which usually contained a large pool. Until this had been done it was difficult to see accurately the extent of the damage. A systematic examination of the abdominal contents was then rapidly made. The small intestine and its mesentery were first looked over from the cæcal end up to the duodenum; the operator lifted out 7 or 8 inches of the intestine, examined it, and then left it for his assistant to return whilst he proceeded to examine the next loop. In this way there was never more than a foot or so of intestine outside the wound, and the whole of the small intestine with its mesentery could be examined in three or four minutes. Unless this systematic search is made it may happen that eight perforations are found and dealt with and the ninth overlooked. The search was next extended to the

colon, stomach, and any other viscera which might have been injured. Tears and perforations were treated by suture or excision of the intestine according to circumstances, and mesenteric injuries were carefully dealt with. Finally the pelvic cavity was usually irrigated with saline solution, some of which was left there, and a large drainage-tube inserted and secured by a stitch.

The patient's general condition was closely watched by the anæsthetist throughout the operation, and if necessary saline was given under the skin or intravenously. Speed is essential in these cases, for there is often much to do and the patients will not stand prolonged operations; also there are often other patients awaiting treatment. Thus, in a period of 24 hours during the battle of Loos 10 laparotomies and over 30 other operations were performed in one of our theatres.

The after-treatment of the cases required much commonsense and strenuous work. It is largely a matter of good nursing, and in this respect we were particularly fortunate. The administration of fluid in abundance is the most important point, for preference subcutaneously and by the mouth. The cases were usually kept in the hospital for 14 to 20 days, and then being convalescent were transferred to the base. Many of the patients were sent by ambulance barge, which we found the most comfortable method of transport for these abdominal cases. Necropsies were performed in the fatal cases unless pressure of work made this impossible; in this way much valuable information was obtained which helped us in our later operations.

Special Regions.

We will now consider certain points in connexion with the different regions of the abdomen.

In *wounds of the upper abdomen* the question of operation is often a difficult matter to decide, and each case requires careful consideration. It has already been said that when the projectile has wounded the diaphragm and caused a hæmothorax the case is usually unsuitable for operation, the chances of recovery being probably greater with expectant treatment. This is especially so if the right side is involved, for then the wounded liver may recover spontaneously and other visceral injury is unlikely. When the stomach area is involved exploration is advisable. It is true that clean perforations of the stomach may sometimes heal naturally, but the lesions are often tears rather than perforations, and other viscera, such as the splenic flexure, the spleen and the kidney, are frequently involved.

Wounds of the central and lower part of the abdomen are exceedingly fatal if left alone, and we made an invariable rule to operate on these cases provided that the patient was well enough to stand it. Multiple injuries of the small intestine were nearly always found—perforations or tears varying in number from 1 to 15 and injuries of the mesentery, often necessitating resection of the involved gut. In addition, wounds of the colon and other parts complicated matters in many cases.

A rapid survey of the extent of the intestinal and mesenteric injuries should be made, and the operator can then decide upon the best method of repair. Our experience led us to treat perforations and tears by suture whenever practicable, even if this caused some constriction of the gut. The extent of the injury or implication of the mesentery, however, will often make resection necessary, and then the point of importance is that the intestine should be resected well beyond the injured area, especially on the proximal side. Occasionally two portions of intestine require resection, and even with this the patient's life may be saved.

Wounds of the back, buttocks, and thighs which implicate the abdomen are very severe injuries, for it often happens that many loops of intestine are damaged. It is also obvious that the abdominal injury in these cases may be overlooked in the first instance, and serious delay may result. Colonel Crawford kindly arranged that all cases with wounds of the back, buttocks, and thighs should be admitted into the section of the unit reserved for abdominal cases; in this way early recognition of those in which the abdomen was involved became easy.

Prolapse of abdominal contents through a wound was almost always a signal of deeper internal trouble; a projectile which had so damaged the abdominal wall as to allow prolapse had almost invariably produced havoc inside. An innocent-looking piece of prolapsed omentum commonly covered one or more large holes in a loop of intestine.

Spontaneous recovery of an intestinal perforation must be a very rare event, if it ever occurs. It is conceivable that minute punctures of the intestine might occasionally heal by natural processes, but lesions of this kind are not seen in warfare; rifle bullets and shell fragments produce full-sized perforations, tears, lacerations, and even complete division of the intestine. In that unit we saw and carefully examined a large number of intestinal injuries in all stages and we found not a particle of evidence to suggest that these lesions ever heal spontaneously. Surgeon-General Makins has sifted the evidence on this point in a paper published in the *R.A.M.C. Journal* for February last, and he concludes:—

> It is indubitable that these results indicate that primary operation in properly selected cases affords the one and only chance of recovery for a patient who has received a perforating wound of the small intestine.

A small number of recoveries after wounds through the intestinal area are explicable in the following way. We came across two cases, and possibly a third, in which bullets or shell fragments had traversed the peritoneal cavity without causing any gross visceral injury. For instance, in one case a piece of shell the size of one's thumb-nail entered through the loin and was found lying under the anterior abdominal wall wrapped in omentum; there had been a little hæmorrhage but no visceral injury of any kind. Such cases treated expectantly might lead one to suppose that injured intestine was recovering naturally; experience shows that in these cases the hollow viscera have escaped injury.

Expectant Treatment.

There will always be some cases in which expectant treatment is advisable or in which it is the only course practicable. The essential features of this treatment are absolute rest and measures to minimise the effects of hæmorrhage and shock—morphia and the regular administration of fluid. Morphia must be used freely, and as a rule its dose should be measured by the degree of pain. There is nothing to be said in favour of withholding fluids in these cases; the body tissues all cry out for fluid, and they cannot be expected to carry on if dry and parched. Fluid should be given by the mouth or rectum, or subcutaneously, according to circumstances. A patient hit in the lower abdomen or pelvis can take frequent small drinks of water with the best results; if hit in the region of the stomach he can have fluid by the rectum or into the cellular tissues.

The arguments in favour of expectant treatment for most cases break down when one goes into detail and gets at the plain facts. It is pointed out that patients recover without operation, but we now know that these patients form a very small minority. Many of the cases quoted as examples of recovery are instances of non-penetrating wounds, and the remainder mostly concern the liver and kidney; it has also been shown that very occasionally bullets may traverse the peritoneal cavity without causing injury to viscera. The belief that intestinal injuries could heal spontaneously has been disproved, and so one of the main arguments for expectant treatment has disappeared.

A statement sometimes advanced against operative treatment is that harm is done by transport, especially by way of increasing hæmorrhage. Obviously many cases are not fit for immediate transport to the clearing stations, and for this reason the proviso was inserted in the order as to the removal of abdominal cases. It is left to the medical officers of the field ambulances to decide whether the patients are well enough to stand the journey.

The Results of Operative Treatment.

It is obviously difficult to get complete statistics, but those available show beyond dispute the decided improvement which has occurred since operative treatment became more general. It seems fair to contrast the first six months of 1915 with the last six months.

In the first six months of the year we have already seen that the mortality of penetrating abdominal wounds in the field ambulances and clearing stations was 73·8 per cent. (48 out of 65 penetrating cases); and the mortality at the base hospitals appears to have been at least 35 per cent. during this period.

For the last six months of 1915 Colonel Cuthbert Wallace has carefully collected the figures in the army to which he is attached. He has kindly sent me the results, and his figures show that the combined mortality in the field ambulances and clearing stations was 61·25 per cent.—a reduction of 12·5 per cent.

511 Penetrating Abdominal Cases, July–December, 1915, reported by Colonel Cuthbert Wallace.

—	Total.	Recovered	Mortality
Total cases	511	198	61·25%
Operations	310	143	53·9%
Operations on—			
Stomach	16	9	44·5%
,, and intestine, &c.	7	0	—
Small intestine, suture	25	14	44·0%
Small intestine, suture, plus other intestinal lesions	12	3	75·0%
Small intestine, resection	51	13	74·0%
Small intestine, resection, plus other intestinal lesions	11	1	91·0%
Large intestine	61	25	59·0%
Cæcum, suture	4	4	0
Solid viscera and genito-urinary organs ...	65	42	35·0%
No operation—			
No indications, including liver and kidney cases	56	55	—
Moribund	145	—	—

Cases now reaching the base have been sent there when apparently convalescent from operation, or if not operated upon when apparently safe from serious trouble. One may therefore assume that the base mortality will prove to be substantially reduced, and I think that one may safely say that the total improvement in the mortality is well over 20 per cent. The first six months of this year should give even better figures still, for now operative treatment for these cases has become generalised.

Conclusions.

1. Operations for penetrating abdominal wounds are not advisable unless they can be done in good surgical surroundings and by an operator with some knowledge of abdominal surgery; otherwise disasters will be more frequent than successes.

2. Patients with abdominal wounds should be sent to an operating station as quickly as possible, provided that they are fit to travel; their prospects depend mainly on the quickness with which this can be done.

3. Patients who are not fit to travel should be kept absolutely quiet, warm, and under the influence of morphia; saline infusion, hypodermically or otherwise, is most beneficial. They are then transported to the operating station as soon as their condition improves; the question is usually settled by the character of the pulse. If the pulse-rate is 130 or over, it is certainly best to keep them in the place where they are receiving their primary treatment until improvement occurs.

4. On reaching the place where they can be operated upon patients whose condition is good should be dealt with at once, otherwise two to eight hours should be spent in preparative treatment. Operation is never advisable if the pulse-rate is 140 or over.

5. The abdominal exploration must be systematic and quick: the duration of the operation should rarely exceed 45 minutes.

6. When good surgical conditions are obtainable operation is the best treatment in most cases, and must be done as soon as the patient's condition allows it. Be prepared for a high mortality, but know that early operative treatment will substantially reduce it.

As an appendix to this paper I will give a brief summary of cases operated upon during a period of three months, and in doing so I must thank Lieutenant-Colonel Crawford for permission to make use of these cases. With one or two exceptions the operations were done by Captain Haycraft and myself.

Summary of Cases Operated upon.

Total 71 ... ... Recovered 39; died 32.

1. Wound of ascending colon; drainage. Recovered.
2. Multiple wounds of small intestine, sutured; also perforation of bladder. Died.
3. Small intestine, prolapsed loop cleansed and returned. Recovered.
4. Wound of liver. Died of generalised gas septicæmia.
5. Stomach, tear of anterior wall sutured; prolapsed colon and omentum returned. Recovered.
6. Small intestine, perforations sutured. Recovered.
7. Wound of liver, empyema, drainage. Recovered.
8. Spleen pulped, removed; kidney also smashed. Died.
9. Small intestine perforated, sutured; omentum also prolapsed. Recovered.
10. Wound of liver. Recovered.
11. Cæcum, two perforations leaking freely, sutured. Recovered.
12. Small intestine, multiple injuries, excision; also amputation near hip for gas cellulitis. Died.
13. Small intestine, four perforations sutured. Recovered.
14. Small intestine, perforations and wounds of mesentery, excision. Died of gas cellulitis starting from buttock.
15. Bladder, extensive intraperitoneal tear, suture. Recovered.
16. Small intestine, multiple injuries, suture, also loop excised. Recovered.
17. Wound of base of mesentery, intraperitoneal hæmorrhage. Recovered.
18. Small intestine injuries, excision; also perforation of sigmoid flexure sutured. Died.
19. Small intestine, multiple injuries, excision. Recovered.
20. Wound of omentum by shell fragment, entering through loin. Recovered.
21. Ascending colon, tear sutured; retroperitoneal gas cellulitis. Died.
22. Wounds of stomach, splenic flexure and kidney. Died.
23. Wound of descending colon. Recovered.
24. Wound of liver. Recovered.
25. Small intestine, multiple injuries; suture and excision. Died.
26. Small intestine, tears, excised; perforation of rectum sutured. Died.
27. Wound of bladder sutured. Recovered.
28. Stomach, two perforations sutured; kidney pulped. Died.
29. Small intestine, many injuries; excision. Died.
30. Small intestine; perforations sutured. Died.
31. Small intestine; perforations sutured. Died.
32. Spleen, tear packed with gauze. Recovered.
33. Sigmoid flexure; perforation drained. Recovered.
34. Spleen, transverse colon, and liver wounded. Died.
35. Small intestine, multiple injuries; two loops excised. Died.
36. Cæcum, large perforation sutured. Recovered.
37. Small intestine, perforations sutured. Recovered.
38. Wound of liver; much hæmorrhage. Recovered.
39. Wound of liver and omentum. Recovered.
40. Small intestine, perforations sutured. Recovered.
41. Transverse colon, perforation sutured. Died of gas cellulitis
42. Bladder torn; suprapubic drainage. Recovered.
43. Cæcum, perforation leaking freely, sutured. Recovered.
44. Small intestine, fistula; also gas cellulitis of abdominal wall multiple incisions and drainage. Recovered.
45. Stomach, tear sutured; also wound of liver. Recovered.
46. Small intestine; perforations sutured. Died.
47. Small intestine injuries; excision. Died.
48. Sigmoid flexure of colon; perforation sutured. Died.
49. Hepatic flexure of colon; perforation sutured. Died.
50. Small intestine injuries; excision. Died.
51. Transverse colon, perforation sutured; hepatic ducts torn. Died.
52. Stomach perforations, sutured. Recovered.
53. Liver and kidney wounded. Recovered.
54. Transverse colon; wound drained. Died.
55. Hepatic flexure, tear; drained. Died.
56. Multiple intraperitoneal injuries. Died.
57. Sigmoid flexure, perforation, drained. Died.
58. Sigmoid flexure, perforation, drained. Died of septic bronchitis.
59. Sigmoid flexure, perforation, drained. Recovered.
60. Sigmoid flexure, perforation, drained. Recovered.
61. Ascending colon, perforation, drained. Recovered.
62. Liver, wound of, much hæmorrhage. Recovered.
63. Small intestine, many injuries to bowel and mesentery; two portions excised. Died.
64. Sigmoid flexure, wound sutured. Recovered.
65. Duodenum, perforation sutured. Died.
66. Transverse colon, tear; colostomy. Died of pneumonia.
67. Splenic flexure, wound of, drained; also tear of spleen. Died.
68. Small intestine, perforations sutured; also perforation of sigmoid flexure; colostomy. Recovered.
69. Liver and base of mesentery wounded. Recovered.
70. Small intestine, perforations sutured. Recovered.
71. Small intestine, perforations sutured. Recovered.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—The annual meeting was held on Oct. 19th, Lord Aberdare presiding. The loss in fees during the year ending June 30th amounted to nearly £500, but in spite of this the College had practically paid its way. Referring to the Welsh Medical School, Colonel Bruce Vaughan stated that the scheme, which was the outcome of Sir William James Thomas's gift, had been sanctioned, providing thus for 250 students. The buildings could be proceeded with, provided the Ministry of Munitions gave its assent. It was decided to pray the Ministry of Munitions to place no further obstacles in the way of the immediate erection of the medical school buildings. Only 104 men students are at present left in the College, 37 of whom are studying medicine.

THE TECHNIQUE OF THE AGGLUTININ TEST.

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DURING the past two years there has appeared in the columns of THE LANCET and elsewhere a considerable series of articles and letters dealing with the typhoid agglutinin reaction. The two main objects of these communications appear to be the following: (1) To advocate the employment by all pathologists of the same "standard" method of performing the test; and (2) to prove the superiority of the method originally devised by Professor Dreyer over all other methods, whether microscopic or macroscopic. A subsidiary question has developed in the course of these arguments, consisting in a dispute as to the behaviour of the agglutinin reaction in inoculated persons who subsequently develop a febrile attack. This article is mainly concerned with the two primary objects of the campaign.

1. *The employment of the same method by all users of the test.*—This has both advantages and disadvantages. The main advantage is pleasantly suggested by the idea that if all workers use the same method the results of all are strictly comparable. This is highly attractive in theory, but breaks down in practice for the following reasons.

(*a*) It is impossible to devise a method of sufficient simplicity to ensure comparable results from a number of individuals of widely different experience and capability. This objection alone would be sufficient to explode the theory for those who are experienced in the teaching of students and post graduates and are acquainted with the widely different results obtained by different users of any of the most simple tests in pathology. In dealing with an agglutination test it must be in the knowledge of most pathologists that when considering what value should be attached to a particular result of a test one asks not by what method was it done, but who did it.

(*b*) The enforcement of a particular pathological method upon all pathologists is naturally resisted by those who have for years been using a different method and who have carefully satisfied themselves of its value by laboratory and clinical experience. It is an infraction of true scientific independence, and to be resisted, unless the advantages are correspondingly great.

(*c*) The standard test must be capable of maintaining its standard over a long period, and in the case of Dreyer's method I doubt if this is possible. Different batches of the standard suspension of bacilli must be made from time to time, and the work done with different batches is compared under the same standard. These batches are bound to differ both in the number of bacilli they contain and in the agglutinability of the bacilli. The number of bacteria differ owing to the impossibility of determining with scientific exactitude the number present in a suspension. The number should, however, be approximately identical, as is the case when the suspension used is estimated simply by the opacity of the fluid. Minor variations in agglutinability taking place over a length of time cannot be accurately determined owing to the difficulty of comparison, since a stock agglutinating serum may also vary in strength with time. The main value of a standard test rests upon the use of a standard bacillary suspension, and in spite of the above objections such a standard is within limits possible, provided that one recognises that in the nature of things faulty batches will from time to time be sent out. Such standard suspensions could equally well be used by other methods, macroscopic or microscopic, if such a procedure were really necessary.

(*d*) The standard test must be simple, and it should be accurate. The simplicity of the test is essential in view of the complete lack of experience and technique among many who must use it at the present time. I do not wish to imply that a simple test is necessarily better than a complicated one, but I strongly object to a not uncommon superstition that a complicated test is necessarily preferable to a simple one. Dreyer's method, compared with other methods in common use, is cumbrous and complicated. Its accuracy is dealt with below.

2. *The alleged superiority of Dreyer's method.*—In an article in THE LANCET of Jan. 1st, 1916, Dr. Ainley Walker asserts that "beyond question the best and most useful of these methods [i.e., macroscopic methods] for accuracy, precision, simplicity, and safety was that devised by Dreyer in 1906." Dr. Walker, however, is more particularly intolerant of the microscopic method, and in the same article clearly and categorically gives his reasons why "the microscopic method entirely falls." His reasons are as follows:—

(*a*) The number of bacilli in the suspension used varies to an unknown degree at each examination. If this were true and important the objection could be got over by using the same suspension sterilised at a low temperature. But I believe that in practical hands the objection falls to the ground. Anyone thoroughly accustomed to making up bacterial suspensions and subsequently estimating them can judge very closely the strength of the suspension by the opacity of the fluid. Gross errors can be produced by using an almost solid suspension on the one hand, or a perfectly clear fluid on the other. Even in unskilled hands such an error as that hinted at by Dr. Walker is incredible.

(*b*) Cultures vary greatly in their susceptibility to agglutination. This objection applies to every method, and with reasonable care can be almost entirely avoided. It is found in practice that a strain of typhoid bacilli can be obtained and made use of over very long periods without any appreciable variation in its agglutinability, provided that the subcultures used are made upon similar media under identical circumstances. Of course, strains occur which cannot be agglutinated at all, but such are obviously avoided. Important variations in the strain used are always looked for, and tested for, from time to time. In my experience such variations in a good strain are most infrequent.

(*c*) The age of the culture, particularly if broth cultures are used, affects the agglutinability. Since a 24-hours-old subculture on a solid medium is, or should be, invariably employed, this objection carries no weight whatever, and should not have been made.

(*d*) Slight differences in the culture-media may affect the agglutinability of the bacillus. I have for years employed agar containing 5 per cent. of glycerine as the medium for subculture. The agar is standardised and made from the same stock substances. I have never been able to find any appreciable difference in agglutinability from this cause, and these objections (both (*c*) and (*d*)) are more likely to occur in the different batches of the "standard" suspensions. Such are Dr. Ainley Walker's objections to the microscopic method, but he adds the following statement: "The method cannot satisfactorily be made use of with killed cultures." It is a fact that cultures killed at too great a heat cannot be agglutinated by any method, but it is difficult to imagine that killed cultures can be agglutinated into masses visible to the naked eye but invisible under the microscope. I have, as a matter of fact, used the method with killed cultures.

On the strength of such objections, not one of which has any practical value, Dr. Walker concludes that "it follows that the microscopic method with fresh living cultures is liable to variations of some hundreds per cent." It would be difficult to find a more misleading statement based upon such flimsy evidence. The microscopic method has certain minor advantages over the macroscopic which I need not here discuss, but proceed directly to consider the possible disadvantages and inaccuracies of Dreyer's "standard" method.

If in spite of the objections natural to the enforcement of a standard technique such an enforcement were deemed necessary, one might at least expect a method which would offer certain advantages. For reasons stated above it should be simple and should afford few bad pitfalls for the unwary. Also it should be accurate. The simplicity of the method may be judged from the directions issued for it. The method is a very lengthy one, largely owing to the number of times the pipette has to be washed out—namely, six times with three different solutions, or 18 times altogether for a single test against one bacillus, and each washing must be thorough or grave errors arise. In practice a number of pipettes are doubtless used, and there is no warning against it, but since the pipettes provided differ seriously in drop capacity an even greater error is introduced. The dropping will depend further upon the pressure exerted on the teat and upon the angle at which the pipette is held, and no warning is issued on these points. Yet it is claimed that the technique can

safely be left in the hands of a laboratory attendant, a procedure which I am convinced should never be advocated even for the most simple manœuvres. In equally practised hands the method is, I believe, slower, more tedious, and more liable to accidental error than is the microscopic or other forms of the macroscopic methods.

The inaccuracies of the Dreyer method as at present employed are dealt with very exactly by Mr. R. Donald in THE LANCET of Sept. 2nd, 1916.[1] These errors are essential errors of the technique, and I will briefly recapitulate the more important of them. A quantitative agglutinin test depends for its accuracy upon the exactitude of the dilution of the serum to be tested. In the microscopic test these dilutions are made by means of a Wright's capillary tube and teat, an extremely accurate method which is quite unaffected by variations in size or diameter of the pipette. In the "standard" method the dilutions are made by drop-measuring, and the errors which Mr. Donald points out are actual errors proved by careful measurement. They are as follows. The "standard" pipettes issued are of different sizes. The only three pipettes examined by Mr. Donald differed seriously, and the difference in outer diameter of two pipettes issued specially for the performance of an extensive research differed in their drop count by as much as 20 per cent. The directions given for diluting the serum with saline make no allowance for the difference in drop count of serum and saline, and in making a 1 in 10 dilution of serum there is a further error of 10 per cent. A similar error, but this time of 20 per cent., occurs in the drop-measurement of the "standard" suspension. These errors may balance themselves or they may not; it is a matter of chance, and the same workers, however skilled, using the two standard pipettes with the directions given would at one time have an error of 40 per cent. and at another time none at all. Now an error of 40 per cent. in measurement alone, when the measurements required can be made accurately by a simpler technique, is a very grave indictment of this "standard" method. It is true that the error is greatly reduced if one pipette is used throughout, but the facts are that the standard pipettes have been taken to be "standard," and have been used alternatively with such errors as are stated above, and if only one pipette is used the method becomes extraordinarily laborious.

While attacking the standard method in this manner, and in attempting to refute the attacks which have been made upon the microscopic method, I would like to confess that I have no doubts of the genuine idealistic views of the "standard" originators. I believe both methods have their minor faults and drawbacks, but I venture to support the view that we have not yet attained a method or a *matériel*, which warrants the general imposition of a fixed technique by a central authority.

The subsidiary question, none the less important, as to the behaviour of the agglutinin reaction in febrile inoculated patients, is one upon which I have little evidence to offer. I have looked up notes upon 100 consecutive cases from the Dardanelles. All of these patients had suffered from fever, the great majority being either paratyphoid or dysentery cases. All had been inoculated against typhoid at periods varying from one year to a few months previously. The typhoid agglutinin test was done in 72 of these cases. It was positive in 15, or in 20·8 per cent.; it was negative or partial—that is to say, gave a complete or partial agglutination in 1 in 20 dilutions and a partial or absent agglutination in 1 in 50 dilutions—in 16·7 per cent. It was completely negative—that is to say, it gave no reaction at all or only very slight clumping in 1 in 20—in 62·4 per cent. A 62·4 per cent. of completely negative tests in febrile cases who have been recently inoculated would seem to bear out the contention that the agglutinin content is diminished in such cases. I am unwilling, however, to include myself in the hymn of hate now being directed against Dr. H. L. Tidy on such evidence as I can offer. My cases are not sufficiently numerous, and they lack the evidence which appears to me advisable—namely, the proof of the amount of agglutinin set up by the inoculation and present before the fever.

This paper would seem to be an attack upon the prominent supporters of the "standard" method; it is not so in reality. I have no doubt that the method as they use it gives reliable results, otherwise they would not advocate it. I merely wish to issue a plea that I and many others may be permitted to use different methods which in our opinion and experience are equally reliable. The whole dispute has arisen out of the very laudable desire to correlate the research of a number of workers. If such correlation were possible by the adoption of a standard method, and could be done only in this way, it would be invidious to criticise it. Yet I believe a simpler and more harmonious plan would be to allow to the workers a choice of any of the recognised methods, in all of which the standard is known, and to leave to a central authority the conversion of those standards into equivalent results.

Queen Anne-street, W.

[1] Since writing this paper I have read Dr. Ainley Walker's reply to Mr. Donald in THE LANCET of Sept. 23rd. The main inaccuracy is there eliminated on the supposition that only one pipette is used. As I point out, the use of one pipette renders the method extremely tedious, and certainly many users of the method have not confined themselves to one pipette. The directions, in alluding to the pipette as "the" pipette, cannot seriously be considered to convey any warning on the grave inaccuracy which arises if more than one be used.

A METHOD OF APPLYING THE WASSERMANN REACTION IN LARGE NUMBERS.

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ON several occasions recently we have been consulted upon the technique of the Wassermann reaction by those who propose to superintend or carry out these tests under the scheme promoted by the Local Government Board. Of recent years there have been few publications upon this subject, and therefore it may be opportune to give a detailed description of the technique without discussing the theory or rationale of the process in any way.

The details of the particular method which we describe are as introduced by one of us into the Royal Naval Hospital, Haslar. In this technique the reaction is reduced to the greatest possible simplicity. It is based upon that practised by us for several years, and which has been published *in extenso*.[1] The chief characteristic of our method is the use of a particular antigen composed of tissue extract mixed with cholesterin. Cholesterin was first used as an antigen by Fleischmann but apparently abandoned, and credit is due to Browning, Cruickshank, and Mackenzie for demonstrating first that cholesterin is capable of much increasing the specific action of another antigen. Browning and his co-workers amalgamated the cholesterin with "lecithin" extracted by themselves, but Sachs (1911) suggested the addition of small amounts of cholesterin to the organ extracts already in use.

In 1912 we published an extensive comparative test which we had carried out between various antigens, including Browning's and our own which we had founded upon the suggestions of Sachs. These tests showed that the formula worked out and suggested by us was more satisfactory than those hitherto in use and fulfilled the requirements of a "standard" antigen which would give comparable results in the hands of different workers. During the past four years this antigen has been extensively adopted, and is probably more widely used now than any other.

1. *Collection of the serum to be tested.*—About 0·5 c.c. of blood is required. This is very easily collected from the finger or thumb. The patient swings his right arm rapidly in order to drive the blood into the finger tips; a piece of fairly thin drainage tubing is then twisted round the thumb and two or three punctures are made with a glass "pricker" or surgical needle just proximally to the nail and towards the ulnar side. The blood is collected in a Wright's capsule of suitable size. Fuse the straight end of the capsule. Attach a gummed label inscribed with the number of the case and enter up the particulars in the book under the

[1] Brain, 1913, vol. xxxvi., p. 193.

same number. Put away the capsule into an efficient ice chest until required.[2]

At this point it may be strongly emphasised that it is of no value to spend time upon an elaborate Wassermann technique if the organisation permits of any possibility of mixing one serum with another. Grease pencil should never be used for writing numbers on glass. Every action involved in collecting the sample and "booking" it must be uninterrupted and rigidly according to routine.

2. *Materials required for the test.*—

a. Copper racks to hold 24 test-tubes, as sold by Messrs. Baird and Tatlock, 14, Cross-street, Hatton-garden, E.C., for this purpose.

b. Test-tubes, 4 × ⅝, washed and finally rinsed in distilled water and dried.

c. 1 c.c. and 10 c.c. graduated pipettes, specially long, graduated to tip (Baird and Tatlock).

d. Washed sheep's corpuscles. Collect the blood from a freshly killed animal into a stoppered bottle containing a few pieces of glass rod and iron wire. Fill only half full. Shake continuously for sufficiently long to defibrinate it. The blood will keep in the ice chest for three or four days. When required, fill the glass centrifuge buckets with the blood and drive down the corpuscles. Remove serum and add saline; shake and centrifuge. This constitutes the first washing. There must be three washings in all. The first may be carried out the day before the corpuscles are required. After the third washing remove the saline without shaking up the corpuscles.

e. Guinea-pig complement. On the day of the test kill a guinea-pig by cutting its throat and collecting the blood in a saucer. The animal is first stunned *slightly* by knocking its head upon the edge of the table. Pour the blood from the saucer into a small conical glass. "Whip" to defibrinate with a piece of cotton-wool upon the end of an iron wire. Centrifuge and pipette off the serum.

f. Antigen. In two bottles A and B. Preparation of heart extract (A). Obtain a fresh human heart. With a pair of scissors cut off the muscular portions of the ventricles and elsewhere, but do not take fat. Mince these pieces and weigh them. Place in a mortar with a little sand and grind them up with absolute alcohol, using 9 c.c. of alcohol to 1 grm. of heart. Transfer the whole to a well-fitting glass-stoppered bottle, and shake occasionally for one and a half hours. Filter into another *well-fitting* glass-stoppered bottle through paper and preserve in ice chest. A deposit will be found to form and this may be filtered off again. Cholesterin solution (B). Take 1 grm. of pure cholesterin, such as Kahlbaum's, and place in a *well-fitting* glass-stoppered bottle. Add 100 c.c. absolute alcohol and put in the stopper tightly. *Shake and heat in water bath* until the cholesterin is dissolved.

g. Amboceptor. This will usually be purchased, although most sera upon the market are somewhat feeble in action.

3. *Standardisation of the amboceptor.*—To be performed with two different guinea-pigs to ensure maximum complement action. The standardisation should be repeated after several months.

a. Materials. 1. Saline solution. 2. Tube containing 0·5 c.c. guinea-pig's serum and 0·5 c.c. saline. 3. Tube containing amboceptor diluted 1 in 1000 thus: Tube *a* = ambo. 0·1 c.c. (*exact*) + saline 9 9 c.c. (shake); tube *b* = 1 c.c. from tube *a* + 9 0 c.c. saline (shake)—this is 1 in 1000. 4. Tube containing 1 c.c. of deposited washed corpuscles + 19 c.c. saline (shake). 5 Rack with 9 test-tubes 4 × ⅝.

b. Method. Fill reagents into the tubes as indicated.

No. of test-tube ...	1	2	3	4	5	6	7	8	9	Pipette to be used.
1. Saline	0·8	0·7	0·6	0·5	0·4	0·3	0·2	0·1	0	10 c.c.
2. Ambo. (tube 3 *b*)	0·1	0·2	0·3	0·4	0·5	0 6	0·7	0·8	0·9	1 c.c.
3. Complement (tube 2) ...	0·1	0·1	0 1	0·1	0·1	0·1	0·1	0·1	0·1	1 c.c.
4. Blood (tube 4)	0·5	0·5	0·5	0 5	0·5	0·5	0 5	0·5	0·5	10 c.c.

Shake. Incubate for one hour at 37° C. and then read off the minimal hæmolytic dose—i.e., the first tube which is absolutely clear. If the m.h.d. does not fall between 0·0001–0·0009 c.c. the test can be repeated, using the stronger dilution of amboceptor (tube 3 *a*). It is better, however, to use an amboceptor which does fall between these limits.

4. *Daily Routine.*—(1) Wash or complete washing of the blood corpuscles.

(2) Kill the guinea-pig and prepare the serum.

(3) Make up fresh saline solution.

(4) Standardise the complement (A) and antigen control (B). (All subsequent measurements under 1 c.c. are made with the 1 c.c. pipette; up to 10 c.c. with the 10 c.c. pipette; above 10 c.c. with a 50 c.c. measure.) Materials: (*a*) Four tubes in the rack, front row, for A; four tubes in the rack, back row, for B. (*b*) Complement diluted 1 in 24 (0·1 c.c. complement + 2 3 c.c. saline). (*c*) Complement 2½ times stronger (0·2 c.c. complement + 1·7 c.c. saline) for antigen control. (*d*) 5 per cent. corpuscle suspension containing amboceptor. This is made up as follows: The quantity required is 0·5 c.c. for every case to be tested + 10 c.c. Thus if 60 bloods are to be tested, 30 + 10 = 40 c.c. is required. The quantities will be as follows: (3) corpuscles (centrifuged deposit), 2·0 c.c.; (2) amboceptor, 4 m.h.d. per tube—i.e., if m.h.d. = 0·0005, 0·002 per tube × 80 = 0·16 c.c.; (1) saline 37 84 c.c. Every half c.c. of this mixture will contain 0·002 of amboceptor, the correct quantity per tube. Make up in the order of the numbers and shake after each addition. (*e*) Diluted antigen, made up as follows:—Rinse out and clean a 1 c.c. pipette with spirit. Take 0·3 c.c. of heart extract and 0·2 c.c. of cholesterin and place in a dry test-tube. Run in 7 c.c. of saline and shake.

Method: fill in the 8 tubes in the rack as indicated.

Front Row (A) for Estimating m.h.d. of Complement.

	1	2	3	4
1. Saline	0·85	0·8	0·75	0·7
2. Complement (tube *b*) ...	0·15	0·2	0·25	0·3
3. Corpuscles + amboceptor (tube *d*)	0·5	0·5	0·5	0·5

Back Row (B) for Antigen Control.

1. Saline	0·35	0·3	0·25	0·2
2. Complement (tube *c*) ...	0·15	0·2	0·25	0·3
3. Antigen (tube *e*)	0·5	0·5	0·5	0·5

Shake. Put rack into a water bath at 37° C. for 10 minutes to see whether the front-row tubes are laking properly, and then transfer to the incubator to complete 1 hour. Read the m.h.d. of complement in the front row and put 0 5 c.c. of corpuscles (tube *d*) into each of the back-row tubes. Put into the water bath and note whether the tube behind the m.h.d. tube is laked (about 15 minutes or less). If so, continue as in following table:—

If m.h.d. is tube 1	use 0·5 c.c. of a	1 in 33	dilution of complement for	[each tube.
,, 2	,,	1 in 24	,, ,,	,,
,, 3	,,	1 in 19	,, ,,	,,
,, 4	,,	1 in 16	,, ,,	,,

If not, take another guinea-pig.

5. *Preparation of serum for testing.*—While the complement is undergoing standardisation, or at any other time on the day of the test, the sera should be distributed into the tubes. The numbered capsules are centrifuged and a series of test-tubes are set out in the racks, each numbered to correspond to the capsules. The numbering of the tubes must be indelible, and is best carried out by Donald's method. 1. Warm the tube in the flame. 2. Inscribe a bold figure on it with ordinary blue-black ink. 3. Burn in the ink by heating in the flame to a point short of the fusing temperature. From each capsule transfer 0·1 c.c. of clear serum to the corresponding tube. This is conveniently done with Donald's dropping pipettes, thus:—1. Pull out a piece of glass tubing into two pipettes. 2. Pass the pipette through a particular hole in a wire gauge plate, when it engages cut it off flush with the plate. The actual hole to be used is found once and for all by experiment. A pipette made in No. 53 Stubbs will deliver 0·1 c.c. of serum in 4 drops. Always hold the pipette vertically and wash with water between each serum. When the sera are all filled in make the tubes into a bundle in some safe and convenient manner and suspend them in a water-bath standing at 55°–56° C. for 30 minutes. Then replace them in the racks in sequence. When testing cerebro-spinal fluid use twice as much and do not heat it.

[2] If the ice chest is inefficient or if the sera have been sent by post or badly collected, it is better not to keep the capsules for several days but to centrifuge them at once and keep the serum separate from the corpuscles.

6. *Preparation of the reagents for use.*—*a.* When the complement is standardised make up a sufficient quantity of the correct dilution to allow 0·5 c.c. for each tube and a little over. *b.* Also make up exactly the same quantity of diluted antigen as shown in the table. Mix in the manner already described for antigen.

No. of tubes.		C.c.		Heart.		Cholesterin.		Saline.
30	=	15	=	0·6	+	0·4	+	14·0
40	=	20	=	0·8	+	0·53	+	18·6
50	=	25	=	1·0	+	0·67	+	23·3
60	=	30	=	1·2	+	0·8	+	28·0
70	=	35	=	1·4	+	0·93	+	32·6
80	=	40	=	1·6	+	1·06	+	37·3
90	=	45	=	1·8	+	1·2	+	42·0
100	=	50	=	2·0	+	1·34	+	46·6
110	=	55	=	2·2	+	1·47	+	51·3
120	=	60	=	2·4	+	1·6	+	56·0
130	=	65	=	2·6	+	1·73	+	60·6
140	=	70	=	2·8	+	1·86	+	65·3
150	=	75	=	3·0	+	2·0	+	70·0

7. *The test proper.*—Mix the diluted complement and antigen together, and then, *without delay*, measure 1 c.c. of the mixture into every tube. Shake. Incubate for one hour in the air incubator. Add 0·5 c.c. of the corpuscle-amboceptor mixture to each tube. Place the racks in the water-bath and read results when some are quite laked and others quite opaque—i.e., in about 10 minutes.

8. *Reading results.*—When judging between complete inhibition and slight hæmolysis, depend more upon opacity than colour. Describe the inhibiting sera as ++++ (complete); +++; ++ or +. ++++ and +++ will be diagnostic of syphilis, ++ and + will be more or less doubtful when the tester has no personal knowledge of the case. If, however, the case is known to have had syphilis, ++ and + assume much more importance. The great majority of cases give ++++ or 0.

THE OCCASIONAL ABSENCE OF A RISE OF TEMPERATURE FOLLOWING THE ADMINISTRATION OF DIAGNOSTIC DOSES OF TUBERCULIN TO TUBERCULOUS PERSONS.

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IT is well recognised that a local reaction and rise of temperature following the administration of tuberculin does not necessarily indicate the presence of an active lesion, signs of a focal reaction alone giving any evidence likely to be of assistance in the diagnosis. On the other hand, many believe that active disease can definitely be excluded if the usual diagnostic doses of tuberculin are not followed by any marked rise of temperature. Our reason for sending these few notes is to emphasise the fact that patients suffering from active tuberculosis and who have not been previously treated with tuberculin may have no rise of temperature of even 1° F. above normal following the administration of diagnostic doses of tuberculin. In other words, the absence of a temperature reaction after the administration of maximum diagnostic doses of tuberculin does not prove the absence of active tuberculosis.

CASE 1.—The patient, a male aged 44, had a history of cough on and off for ten years, more marked since November, 1913. In July, 1914, he was admitted to the sanatorium for observation. He had received no tuberculin treatment prior to admission. There was impaired resonance at the right apex, but no sign of active disease. As some doubt existed as to the diagnosis, a short time after admission, at intervals of three and four days, 0·00002 P.T.O. and $\frac{1}{5}$, $\frac{1}{2}$, 1, 2, 5, and 10 milligrammes of tuberculin (T.) were given. The four-hourly chart showed no rise of temperature, except on the day following the $\frac{1}{2}$ and 1 milligramme doses, when the mouth temperature rose to 98·6° and 99·2° F.; on two occasions prior to the administration of tuberculin a temperature of 99·2° had been recorded. The local reaction was slight. The patient's weight steadily rose from 55·5 kilos on July 17th to 60 kilos on August 20th, when he was discharged. A trace of albumin but no tubercle bacilli were found in his sputum at that time.

The patient's condition remained stationary until November, 1915, some 15 months later, when he was readmitted with definite crepitations at the right apex and tubercle bacilli in the sputum. On Dec. 20th, 28th, and 31st, and Jan. 6th $\frac{1}{5}$, $\frac{1}{2}$, 1, and 5 milligrammes of tuberculin (T.) were administered, followed by no increase of temperature over the normal, except on two occasions, 99° being recorded on the third day after the $\frac{1}{2}$ and 5 milligramme doses; a temperature of 99° had been recorded on Dec. 11th a short time prior to the injections. On Jan. 9th there was increase of cough and sputum but no rise in temperature. The sputum was then sent to the Lister Institute for examination in order to exclude the possibility that saprophytic acid-fast organisms had been mistaken for tubercle bacilli; the guinea-pigs inoculated showed macroscopic signs of tuberculosis.

This case seems to prove that the routine diagnostic doses of tuberculin may not be followed by a temperature appreciably over the patient's normal temperature (*a*) at an early stage of the disease when tubercle bacilli cannot be found in the sputum, and (*b*) at later stages when these are present and even when a focal reaction indicated by increase of cough and sputum is caused.

CASE 2.—The patient, a male aged 2, was admitted suffering from spinal caries and healed tuberculous abscesses on the foot. He received $\frac{1}{5}$, $\frac{1}{2}$, and 1 milligramme of tuberculin (T.), the highest subsequent temperature being 98·6° F. Five months later an abscess formed on the dorsum of the foot, broke down, and remained open for some time. In this case the maximum dose administered was 1 milligramme, but the child was only 2 years of age.

In this connexion it is interesting to note that of the animals infected with human tubercle bacilli and tested with homologous tuberculin the following gave a temperature reaction[1] (rises of 0·9° C. over the normal): 107 of 124 calves, or 86·3 per cent.; 6 of 6 goats, or 100 per cent.; 10 of 11 pigs, or 90·9 per cent.; and 4 of 4 horses, or 100 per cent. Evidently neither in man nor in animals does the absence of a temperature reaction following tuberculin exclude active tuberculosis.

Brighton.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF ELECTRO-THERAPEUTICS.

Exhibition of Case and of Skiagrams.—Gas Gangrene.

A MEETING of this section was held on Oct. 20th, Dr. G. HARRISON ORTON, the President, being in the chair.

DR. E. P. CUMBERBATCH showed a female patient, about 60 years of age, for the purpose of illustrating what could be accomplished by the diathermic cautery in cases of malignant disease. In 1913 she came to him with a rodent ulcer on the scalp, measuring 1 by ¾ in. in diameter. Zinc ionisation, repeated six times, produced no benefit; neither did a course of X ray treatment. A combination of both those methods was equally barren of results, for at the end of 10 months the diameter of the ulcer had increased to 1¾ by 1¼ in. Accordingly, in March, 1914, he commenced the use of the diathermic cautery, cauterising with it the edges of the ulcer and the granulations at the base. There could now be seen a central area of parietal bone occupying the base of the ulcer, and around that the tissue was apparently healthy. That greatly improved condition had persisted for a year and seven months. In treating bone cases Dr. Cumberbatch insisted on great care being taken not to allow the diathermy to damage the periosteum.—DR. W. J. TURRELL, in discussing the treatment, said that no attempt should be made to treat the whole growth at once, when the wound was a large one, but that treatment should be proceeded with in stages, so that the effect of the previous application could be assessed before entering upon another.

DR. H. A. ECCLES showed, by means of the epidiascope, a valuable series of skiagrams of Fractured Jaws, from a

[1] Final Report of Royal Commission on Tuberculosis, Part II. Appendix Report on Tuberculin Tests.

special jaw section of the large military hospital to which he was attached. Every patient was radiographed at the earliest opportunity after admission, and in many cases three or four pictures were taken to determine the effect of the treatment or the presence of sequelæ. The chief purposes served by radiography in jaw cases were: to diagnose fracture, to ascertain the position of the fragments before and after replacement, to ascertain whether roots of teeth were present in the fracture, their presence being a fruitful cause of non-union; to determine the degree of union, the condition of the bone, and the state of the bone-graft; and to detect and localise foreign bodies. Some 60 per cent. of these cases were returned to the front from the department.—Several members discussed the contribution, and Dr. ECCLES replied.

Dr. AGNES SAVILL contributed a short paper on her experiences in a hospital near the firing line of cases of Gas Gangrene, and by means of a series of skiagrams demonstrated the peculiar appearances seen in this terrible disease. Associated with gas gangrene were so many micro-organisms that it would be difficult to assign specificity to any one of them; and pathologists were now working at the problem in order to discover the direct and the contributory causes of the two types, the localised and the massive. Of the cases admitted between July and the middle of September 304 were found to contain the micro-organisms usually found in gas gangrene, and over 100 of them presented on admission definite clinical signs of gas. At the hospital every wound was reported upon by a bacteriologist, and cases presenting clinical signs which needed surgical intervention were operated upon as soon as possible, and those which had a mixed aerobic and anaerobic infection were given operative precedence over the others. In the most severe and fatal cases the radiologist was able to detect a fine striation dividing the muscular fibres; it was seen only about 24 hours before death. A French worker considered that the *vibrion septique* was the causal organism of gas gangrene, but B. perfringens (in a large proportion), aerogenes capsulatus, sporogenes, and histolyticus had all been found in such cases. When sporogenes was present the skiagram showed a cloudy shadow or small bubbles. Only two of the cases of the numerous series exhibited the fine striation lines. At present the surgeon could rely upon the radiologist in cases of this disease in much the same way as the physician could rely upon the bacteriologist in a case of suspicious throat.—A discussion followed.

New forms of apparatus were also shown.

LONDON DERMATOLOGICAL SOCIETY.—At a meeting of this society on Oct. 17th Dr. W. Knowsley Sibley explained in his presidential address that the objects of the society were consultative, educational, and social. He appealed to the profession to stand as a body against the invasion of all German importations, this stand to be taken in common with our Allies.—Captain W. Griffith, R.A.M.C., showed three cases of Dermatitis Herpetiformis and one of Recurrent Summer Eruption.—Dr. Morgan Dockrell: A case of Generalised "Chorionitis" in a man aged 55, a telegraph fitter. He attributed the cause as being due to exposure; the condition had improved with radiant heat baths and internal treatment of thyroid extract 15 grains a day and injections of pilocarpine 1/6 grain three times a week.—Dr. J. L. Bunch: 1. A woman, aged 43, with a Swelling behind the Right Ear involving the Anterior Part. He suggested that the case might be one of lymphangioma. 2. A boy aged 12 with Vitiligo.—The President: A case of Lichen Planus becoming atrophic.

HARVEIAN SOCIETY.—At the Harveian Society of London on Nov. 2nd Dr. E. Farquhar Buzzard will read a paper entitled "Warfare on the Brain"; on Nov. 23rd Mr. Robert Jones will open a discussion on the Treatment of Fractures; and on Dec. 7th Dr. B. H. Spilsbury will read a paper on Sudden Death.

LITERARY INTELLIGENCE.—Messrs. Cassell and Co., La Belle Sauvage, London, E.C., announce the early publication of a sixth edition of "Clinical Methods: A Guide to the Practical Study of Medicine," by Dr. Robert Hutchison and Dr. Harry Rainy. The previous edition was published in 1912.

Reviews and Notices of Books.

(1) *Pulmonary Tuberculosis.*
By MAURICE FISHBERG, M.D., Clinical Professor of Tuberculosis, New York University. Illustrated. Philadelphia and New York: Lea and Febiger. 1916. Pp. 639. Price $5 net.

(2) *Pulmonary Tuberculosis in General Practice.*
By HALLIDAY G. SUTHERLAND, M.D. Edin., Tuberculosis Officer for North Marylebone and Medical Officer to the St. Marylebone Tuberculosis Dispensary. Illustrated. London: Cassell and Co. 1916. Pp. 290. Price 10*s.* 6*d.*

IT is becoming increasingly recognised that in order to command success the treatment of pulmonary tuberculosis must be continuous, and this necessity is obvious when it is borne in mind that infection is, as a rule, acquired in early youth, while the risk of the disease developing or relapsing lasts into old age. Tuberculosis is nearly conterminous with life itself. The treatment of the patient—or rather the supervision of the whole life of the tuberculous subject—cannot therefore be left to the consultant or to the sanatorium officer, but must in the main be the concern of the family physician, who alone has the opportunity of dealing with the case as a continuous whole.

(1) Dr. Fishberg has written his book to supply the general practitioner with information concerning the etiology, diagnosis, prognosis, and treatment of pulmonary tuberculosis, its clinical forms and common complications. An experience of 18 years in dealing with tuberculosis problems in New York City convinced him that the practitioner can, and should, do more than attempt to recognise the disease early in order to send the patient to an institution, and that careful home treatment is productive of practically the same results as institutional treatment, and can be given at a smaller cost to the patient and to the community. His book is intended to equip the practitioner with the information which will enable him to carry out this home treatment effectively. Dr. Fishberg writes with authority as one who has practical knowledge of the things of which he writes. He has no special axe to grind, and his book may be read from beginning to end without discovering that he has invented or improved any item in the whole treatment of the tuberculous patient; but there are few pages which do not contain some illuminating suggestion or which do not throw new light on some old aspect of the disease. Koch's experiment on himself in which he found that 250 c.mm. of old tuberculin produced severe febrile reaction is well known and the correct deduction frequently drawn, but we do not remember having read elsewhere the statement that the necropsy showed him to have suffered from extensive pulmonary tuberculosis.

Dr. Fishberg, in emphasising the lesson that good food is a more important factor in recovery than good air and even good residence, quotes the remarks of an American historian, W. Garrott Brown, who succumbed to phthisis, on the difficulty of discovering the place where he could breathe freely and constantly the right kind of air and at the same time eat in abundance the right kind of food. He made the melancholy discovery that Americans who could be induced to "take boarders" who are sick were, many of them, such as had already failed to minister acceptably to boarders who are well.

The arrangement of the book is simple and easy to follow. Dr. Fishberg makes no attempt at elaborate classification of the clinical forms of tuberculosis. He recognises that to be of practical service the classification must have a prognostic value, and he therefore describes the symptoms under the seven simple headings: chronic phthisis, incipient stage; chronic phthisis, advanced stage; acute phthisis; fibroid phthisis; abortive pulmonary tuberculosis; pulmonary tuberculosis in children; and phthisis in the aged. It is not very deep of the author, but the practitioner will thank him for it. Physical signs are dealt with as though Dr. Fishberg took a personal interest in them: the methods of Krönig and Goldscheider come into their own, and the chapter on percussion is greatly helped by the excellent and artistic illustrations. Fig. 60 is quite brilliant in its helpfulness. The value of medicinal treatment is duly recognised by the author, who finds, indeed, no panacea in drugs, but agents

which exert a beneficial influence on some of the annoying clinical phenomena. Dr. Fishberg is frankly sceptical of the value of tuberculin in treatment, and considers that the general practitioner should not use it at all. His book must not, therefore, be consulted as a guide to its administration. To the subject of artificial pneumothorax he devotes more than 30 pages, on account, as he says, of the efficacy of the treatment in selected patients where everything else has failed to afford relief. This section is a safe guide to practice. We cannot conclude without paying a tribute to the author's wide reading and his catholicity of view, which renders his book of equal value in whatever country it is read. The text and illustrations are both without blemish.

(2) Dr. Halliday Sutherland has also written his book for general practitioners and has succeeded in making it attractive. He has reduced the pathological section of his subject to its smallest dimensions, limiting it to the minimum necessary for the interpretation of clinical signs. This has given him adequate space to devote to diagnosis and the course of the illness, describing symptoms and physical signs in a clear and interesting manner. We wonder whether the author is really well advised in adding yet another table of graphic signs and abbreviations to the many which are already available and which seem to some to darken knowledge. We do not know whether Dr. Sutherland has shown his polyvalent tuberculin to present such practical advantage over other forms of tubercle vaccine as to deserve a place where the room is already so crowded. But it would be captious to refuse the author the right to lay stress on some of the points to which he has himself paid special attention. The book is a most useful guide for the general practitioner and contains much essential advice in a small compass.

LIBRARY TABLE.

Manual of Operative Surgery. By JOHN FAIRBAIRN BINNIE, A.M., C.M. Aberd., F.A.C.S., Surgeon to the Christian Church, the German, and the General Hospitals, Kansas City, Mo., &c. Seventh edition, revised and enlarged. With 1597 illustrations, a number of which are printed in colours. London: H. K. Lewis and Co., Limited. 1916. Pp. 1363. Price 32*s.* net.—It can hardly be necessary to say much about this edition of a well-known work, though, as it is possible that some surgeons do not know it, we may mention that it contains an epitome of all the operations which may be performed in surgery; it gives briefly, but in sufficient detail for the practising surgeon, the methods of performing an immense number of operations. It is not intended so much for the student as for the surgeon who, being called upon to perform some operation which he has not done before, will find in this volume the facts which he needs. The present issue contains a few new features, and it has been brought thoroughly up to date. A chapter on the surgery of the heart has been added, and a chapter on war surgery, written by Dr. Walter Sutton, also finds a place. The book can be thoroughly recommended to all surgeons.

Anatomia de los Conductos Biliares y de la Arteria Cistica. By Dr. PEDRO BELOU, Profesor Titular de Anatomia Descriptiva de la Facultad de Ciencias Medicas de Buenos Aires. With 102 figures and 21 plates, 14 of which are coloured. Buenos Aires: Imp. "Oceana," Calle Chile 525. 1915. Pp. 302.—This admirable monograph deals exhaustively with the anatomy, descriptive, surgical, and comparative, of the biliary apparatus. Professor Belou has made an excellent arrangement of his subject, giving an exhaustive account of his personal investigations, and summing up the previous literature. As a treatise the book is without a rival, and as a monograph it comes as near perfection as it is possible to attain. All the illustrations are good; some are drawings, some are photographs, and all are well reproduced. The coloured plates rank among the most beautiful anatomical representations published. The press which prints and issues a book of this nature is to be congratulated, for the greatest care has been lavished upon every detail which goes towards the making of a good book, and a good book it undoubtedly is.

Wheeler's Handbook of Medicine. By WILLIAM R. JACK, B.Sc., M.D. Glasg., Physician to the Glasgow Royal Infirmary. Fifth edition. Edinburgh: E. and S. Livingstone. 1916. Pp. 552. Price 8*s.* net.—The Scotch medical schools are fortunate in possessing good text-books of moderate size, and this is one of them. Wheeler's Handbook has now reached its fifth edition, and Dr. Jack states that the changes made in the book since 1894 have been so great that little now remains of Dr. Wheeler's writing. The additions to the present issue are chiefly apparent in the sections on cardiac disease, where the newer diagnostic instruments are figured and described. Increased space has been given throughout to the paragraphs on treatment, dealing both with newer and more established methods. It is, of course, possible to make minor criticisms regarding arrangement of subject-matter: poliomyelitis surely deserves a place among the specific infectious diseases due to filter-passers. And one of the lessons of the present war, that the infection of typhus is carried by lice only, is not emphasised. The limit, too, of compression is reached in such a sentence as (describing artificial pneumothorax): "The gas is at first rapidly absorbed, and hence must be reintroduced at increasing intervals." There are a few slips: T.O.A. is not the symbol for old tuberculin. But these are minor blemishes in an otherwise excellent handbook.

CURRENT GERMAN MEDICINE.

Effect of the War on the Birth-rate.

THE effect of the war, according to Dr. G. Mamloch's reading of the recent German official returns (*Deutsche Medizinische Wochenschrift*, No. 38), began to make itself felt on the birth-rate in the second quarter of 1915. The number of live births in the total of 26 German cities of over 200,000 inhabitants fell from 66,032 in the first quarter of 1914 to 42,723 in the last quarter of 1915. For the whole year 1915 the total was 49,749 less than in the previous year, a reduction of 19·3 per cent. This percentage diminution was highest in Chemnitz (27·2), Nürnberg (27·1), Hamburg (23·6), and lowest in Mannheim (14·2), Berlin-Schöneberg (13·1), and Kiel, where it only amounted to 7·5. In Berlin itself the deficit of births was proportionately vastly greater than in the war years 1870–71. Some of this diminution in the number of live births was made good by a reduction in the infantile death-rate, which was 14·0 in 1915, reckoned on 100 live births, as compared with 15·3 in 1914. Such a low infant mortality figure as that of the war year 1915 had never previously been observed in Germany. A number of towns certainly showed high figures—e.g., Königsberg, 19·6; Magdeburg, 19·5; Danzig, 19·2, doubtless owing to their unfavourable proximity to the war area; while seven towns showed a figure below 12—viz., Hanover, Dresden, Frankfort-on-Main, Düsseldorf, Hamburg, Stuttgart, and Bremen.

Issue of Food Certificates to Invalids.

The Berlin correspondent of the *Münchener Medizinische Wochenschrift* (No. 39) describes the recent experience with the issue of food certificates to invalids in Berlin. The intention was, where food-stuffs in general were short, to prevent patients from suffering. A schema had been drawn up, to be filled in by the medical attendant, giving in addition to personal details, diagnosis, complications and duration of the illness, the harm which might be expected to follow from not obtaining the particular nourishment (milk, eggs, butter, meat, flour) and the period for which special nourishment was required. This schema was to be obtained by the patient from the depôt for invalid food, and handed by him to his doctor to fill in, the latter posting it direct to the depôt. In special cases an urgent mark could be made on the envelope. The plan was well thought out for the following reasons: (1) It did not oblige the doctor to disclose to the patient the existence of a serious illness; (2) the distribution was to be made in proportion to the available supply and the severity of the illness; and (3) any displeasure for refusal fell not on the certifiying doctor but on an anonymous committee. But the plan pre-supposed intelligent coöperation on the part of the public, and this unfortunately did not occur. The first announcements had hardly appeared in the press when everyone discovered an illness or recollected one from which he might have suffered years before and for which a nourishing diet had been prescribed. It was quite remarkable, says the correspondent, how in the summer months, in which as a rule the average health was good, the sickness returns suddenly rose, and even consulting rooms which were normally empty became filled to overflowing. The task for

the Berlin doctors, he adds, became a highly laborious as well as an invidious one. Some 70,000 certificates were presented in central Berlin alone to be filled in. The correspondent concludes with the remark that it would have been simpler to give up the use of milk and butter altogether than to carry through the scheme.

Recent Work on MSS. of Hippocrates.

Notwithstanding the manner in which the energies of Germany must be absorbed by the war her classical scholars are still publishing the results of their researches, and this is especially the case with regard to ancient medical literature. During last year Messrs. Teubner, of Leipsic, produced two more important volumes of the great Corpus Medicorum Græcorum. The first was the work of a trio of editors, Herren H. Diels, who some years ago edited the papyrus manuscript known as the Iatrica in the British Museum, and J. Mewalt and J. Heeg. This volume contains Galeni in Hippocratis Prorrheticum I. Decomate Secundum Hippocratem. In Hippocratis Prognosticum. Freiderich Marx has been responsible for the other work, which is the first volume of Celsi A. Cornelii, and has one plate. In the philological journal, *Hermes*, several essays have appeared augmenting our knowledge of the Hippocratean corpus. One of these concerns the collection of fragments of his *περὶ ἑβδομάδων*, which were discovered at Venice some years ago by Herr Helmreich. Seven of the best preserved of these are now published, together with their corresponding Latin paragraphs in Littré's edition of Hippocrates, where the whole Latin recension of the book is printed. This Latin text is, however, such a poor one that some editors prefer to give for this work only the numerous Greek fragments known, making these from Venice a welcome addition. Herr Helmreich shows that the lost complete Greek text was still extant as late as the seventeenth century. Meanwhile, the Egyptian papyri are perpetually rendering up portions of this famed author, and the Italian School of Papyrology has just brought out its first volume of new classical literature which contains solely "*Hippocratis Aforismi*," and so will increase our knowledge of the correct original text of this book.

The most important study of a work of Hippocrates is by Herr F. Jacoby, who endeavours to restore the original text of the *περὶ Ἀέρων, Ὑδάτων, τόπων*. This he strives to achieve by eliminating what he believes to be early additions, and later interpolated marginal glosses which in time have been foisted into the true text. He also describes several errors arising from manuscript transmission. He shows that the original work almost certainly terminated at Chapter XXIV. This work has been added to by someone familiar with Scythia and Greece, and these additions were made before Aristotle's time, because he knew of them. The first half of the treatise, concerning diseases induced by various climates, and the second moiety, relating to the effects of climate upon racial characters, are both by the same author. Valuable notes concerning this frequently quoted work, which may be said to be the precursor of modern ideas of the influence of climate upon history, as to its utilisation from the time of Aristotle and Galen, complete this interesting study.

New Inventions.

A NEW SPLINT FOR FRACTURED HUMERUS.

THE splint here illustrated is designed for cases of compound fracture of the humerus, and is a modification of Middeldorpf's triangle. The drawback of the latter is that it does nothing to neutralise the pull of the deltoid muscle, and, secondly, that it has a marked tendency to slip obliquely on the body.

The material of the splint is perforated zinc sheeting with ⅛ inch holes. The body-piece is in halves, with a wire rod to serve as a hinge; the removable hinge makes the splint more manageable in padding it and for storage. The edges are stiffened by soldering on wire. The body-piece is fastened by a broad leather strap and buckle, with a brace over each shoulder buckling to the anterior edges. The arm-piece is fixed horizontally by a short strut of copper tubing near the axilla (in the illustration this is concealed by a bandage), and a longer strut fixed just above the elbow, the lower ends of both being soldered to the side of the body-piece. The forearm-piece is fixed at rather less than a right angle to the latter by a third strut placed horizontally. The edges of both arm-pieces are stiffened by wire, and if the wire were turned medially at the wrist its ends could be soldered to the chest-piece and thus replace the copper strut. The wire edging of the arm-piece is turned downwards at the axilla and soldered to the chest-piece below the upper edge, giving additional rigidity. Beyond the elbow this wire is prolonged in a square loop a foot long with a ring at its centre. Above the elbow a stirrup is fixed by strapping, and extension is obtained by a spring fixed to a ring in the stirrup and at the outer end to a threaded rod passed through the ring on the square loop and tightened by a thumbscrew. This spring can be replaced by a rubber cord or by bandages. The limb is merely bandaged on the splint.

In the case illustrated the wound is on the outer side of the arm. When a dressing is required on the inner side the only change necessary is to have a trap-door cut in the zinc of the arm-piece.

The advantages I claim for this splint are: (*a*) The deltoid is thrown out of action, since the arm is held so high and the elbow with the lower fragment is immobilised by the forearm-piece. (*b*) As the splint goes completely round the thorax it cannot tilt from the weight of the arm. (*c*) The spring allows extension to any degree thought necessary — the one illustrated can be tightened up to 10 pounds' resistance; it does away with the inconvenience of having a weight dangling and swaying over a pulley. (*d*) This splint weighs 2 lb. 15½ oz. without padding. The patient was able to be up the day after it was applied, a stage which had been impossible for him with any other apparatus used in his case.

The splint was made according to my instructions by the engineer of this hospital. For the photograph I am indebted to Sergeant Brailsford. R.A.M.C. I have to thank Lieutenant-Colonel Gilbert Barling, consulting surgeon, Southern Command, for permission to forward this note for publication.

JAMES RAE, M.A., M.D. Aberd.,
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THE LANCET.

LONDON: SATURDAY, OCTOBER 28, 1916.

The Position of Practice under the Insurance Acts.

THE Conference of representatives of Local Medical and Panel Committees from all parts of Great Britain, which met on Thursday of last week, had a heavy agenda paper to get through, and it was only by severe economy of time and concentration on major points that the meeting was able to break up before midnight. Discussion chiefly centred around the draft agreement for 1917 with the Insurance Commissioners, the question of collective bargaining, and that of panel practice in munition areas. With regard to the new regulations in the 1917 agreement, the feeling was general that it was neither fair to the practitioners absent on active service, nor to their colleagues doing double duty at home, that substantial alterations should be made in the panel practitioners' agreement with the Commissioners. The only alterations which panel practitioners could accept were such as were actually due to war emergency. Two departments of practice were recognised by the Conference as dictated by emergency: one, the scheme of the Local Government Board for control of venereal diseases, a proposal which emerged complete and perfect from the depth of the Government bureau without foreknowledge on the part of the Insurance Commissioners; the other being the treatment of disabled sailors and soldiers invalided out of the Services. In the case of the former the Conference, after a very full discussion, found itself prepared to adopt, in the words of the new regulations, "such steps as are reasonably necessary to enable the patient to take full advantage" of medical services provided by a public authority, but decided to limit this acquiescence to the Local Government Board scheme for venereal diseases, and to considering, if necessary, any further schemes on their own merits when they should arise. The position of the panel practitioner remains, as heretofore, a secure one, in that no public authority of whatever kind is in a position to dictate to him his duties in regard to any local scheme. The practitioner is only required to take such steps as seem to him and his local medical committee reasonably necessary, being responsible in the final issue to the Insurance Commissioners.

With regard to the treatment of disabled sailors and soldiers, which seemed in the second year of the war likely to attain to prodigious dimensions, it is understood that strong pressure is being brought by the Central Medical War Committee, the Committee of Reference of the English Royal Colleges, and the Insurance Acts Committee of the British Medical Association, upon the War Office to postpone the discharge from the Service of any disabled man until his treatment had been carried through so far as to render him as useful a citizen as he could become. In this way, when discharged, the disabled ex-Service man, although a damaged life, should no longer require the amount of constant medical supervision from his panel practitioner which by anticipation had given rise to wide apprehension. When the position had thus been made clear the Conference decided to accept alterations in terms of employment with regard to the two departments of practice specially affected by the war, and to do so not grudgingly but as a tithe of the war service which panel practitioners were prepared gladly to render to the country. Whereas in controlled businesses generally profits had risen in proportion to the work done, this was not the case with the medical profession, whose arrangement with the Insurance Commissioners was precisely on the same terms as in pre-war times. At the end of the war this patriotic action on the part of panel practitioners should receive proper acknowledgment by the Commissioners. Far from being unwilling to enter upon any new schemes and developments in regard to panel practice, the Conference definitely decided to adopt a constructive policy for its action after the war, and to call upon the Insurance Acts Committee to draft a model scheme for a complete medical service for insured persons.

The question of collective bargaining between the British Medical Association and the Insurance Commissioners was discussed, and the recommendation made that three months' notice should be given to the Insurance Acts Committee of the Association of any prospective alterations in the agreement for the coming year, the Committee in its turn handing down to the Panel Committees the propositions at the earliest moment at which this could be done without breach of confidence. It was agreed that Local Panel Committees must be left free to make their own special arrangements with the Local Insurance Committees, and that it was not desirable to enforce any stereotyped scheme upon them. The formation of a trades union to enforce the collective interests of the panel practitioners upon Insurance Committees did not command the assent of more than a few of the representatives. It was very generally felt that the relation in which the medical profession stood to the various branches of the Insurance Commission was one which enabled them to obtain all that the trades unions would be only too glad to obtain for themselves. Two recent cases in the law courts, in which disputes between the doctor and his Insurance Committee had been decided in favour of the doctor, served to show that there was a practicable appeal even against the State as employer.

The third matter claiming the attention of the Conference was the question of certain conditions of panel practice in munition areas. The subject was dealt with in our leading article last week, our anticipation being based on the Memorandum issued by the Insurance Commissioners after conference with the Insurance Acts Committee of the

British Medical Association. The situation here was greatly improved by the interchange of question and answer which took place at the Conference itself, when several of the Commissioners, including Sir ROBERT MORANT and Mr. J. ANDERSON, came to the Conference ready to answer questions of fact as they were put to them. This privilege was made full use of and the answers received were such as to dispel certain of the misunderstandings and misgivings felt by panel practitioners in regard to the collection and distribution of the funds of the Insurance Commission. It became clear to the Conference that any increase of the insurance funds in the munition areas could only be obtained at present by a corresponding diminution of the funds in other areas. The extent of munition areas grows, and in many where actual numbers on the panel have not become greater, the increase of disablement, as well as the shortage of medical men, make the conditions of all panel practice exceedingly responsible and arduous. The representatives of the munition areas felt themselves, therefore, scarcely justified in pressing for favoured consideration in these circumstances. At the same time the Commissioners admitted that if there was to be any large efflux of completely or partially disabled men from the services it would be equitable to modify the formula on which medical benefit was calculated, and this is, in fact, having the careful and immediate attention of the Commission. These were the more important points discussed at the Conference, the whole of whose varied deliberations were of intense interest. The prevailing note of the meeting was one of intention on the part of panel practitioners loyally to carry out their obligations to their constituencies in a time of grave difficulty and pressure.

Economy of Time in Civil Medical Practice.

WE hear from many parts of the country that practitioners are overworked to the verge of breakdown, and, in spite of every effort, are unable to meet the demands upon their time. We know of one county with a fair-sized county town and for the rest only large villages and rural districts, in which the remaining medical practitioners are so thinly spaced out that the position would seem untenable if any single one of them were to become incapacitated. We have met the secretary of a local Medical War Committee, instituted for a large urban district, who had come up to London expressly to make representations to the Central Medical War Committee that one particular panel practitioner could not be spared and must on no account be granted a commission. And we chronicled a week or two ago the position of another large urban district in which the strain on medical men was such that they had hardly time to break bread. These things may be exceptions and not real samples of a general state of affairs. We take that view. There is still a thin margin in the majority of places between what can just be done and what cannot possibly be done, otherwise the following alternatives would be before us: either the number of civilian practitioners must be increased, or the amount of work they have to do must be diminished, or the method in which the work is done must be rearranged.

We may dismiss the first two of these alternatives. Medical men, unlike poets, are the outcome of education and are not born instinct with pathological wisdom; and the amount of work that they must do cannot be controlled, for they will always accept it as their duty to perform all that lies within their conceivable scope. But the third alternative, the rearrangement of the civil practitioners' work, so that greater economy of time and of effort is secured, appears to come within the range of practical endeavour, in which case there is nothing panicky in giving timely consideration to the way in which such economy could be effected. A little forethought now might save huge friction in a few months' time. The medical work of general practice varies in urgency. On the one hand are accidents, cases of infectious disease and of acute illness of various kinds. At the other extreme are the illnesses of neurasthenics and the duty calls to patients, who are prevented in many instances from becoming more seriously ill owing to the confidence which they feel in their medical advisers. This latter class of practice has been profoundly modified during the war. Not only have medical men been unable to find time to pay their less urgent visits, but the atmosphere of this country, now seriously at war, has been uncongenial to the development of imaginary or "functional" disabilities. War has proved the capable doctor for such patients and has prevented rather than cured their conditions. It is openly stated in Berlin that when more than half of the medical men were called away at the outbreak of war those that remained had less to do, and this was accounted for by the disappearance of minor and especially of "functional" ailments. In our country such complaints as migraine have diminished in a remarkable degree, and this alone has sensibly relieved the practitioner. But the war should not be depended upon to do all the necessary reforms, and there are many directions in which the conduct of civilian practice could be made far easier by organisation. It has been suggested that the insured patients should be required to pay an extra fee for every call made between the hours of 10 P.M. and 6 A.M.; the surest way to check the thoughtless is some reasonable fine commensurate with the unnecessary visits, and when the public understands the absolute necessity of safeguarding the doctors' time we have no doubt whatever that this view will be taken. We think, however, that it should be always optional for the medical man to exact or remit this extra fee, ensuring that it should only be paid when the call might either have been made earlier in the day or have been delayed until the following morning. This is an idea that might be developed, and in many other ways coöperation could be instituted among medical men, with added convenience to their patients and with a great saving of time and

trouble to themselves. But, unfortunately, most schemes whereby medical men can help each other through some rearrangement of work must be confined to urban districts; medical practice in the country presents little opportunity for flexibility.

Where the work cannot be diminished or the strain be relieved by any methods of give and take between medical men it becomes the imperative duty of every medical man to see that he does not become over-wrought in doing his duty. Where there is a prospect of relaxation ahead pressure of work may be tolerated for a while, but continued strain only too often leads to breakdown, and breakdown may, in the present depleted state of our professional ranks, result in the dislocation of the practice of a whole county. Much doubtless may be done by deputing the non-medical part of the work to those who can do it equally well—the arrangement of notes and letters and the dictation of correspondence are obvious instances. Concentration on the essential parts of practice is very necessary. There is a movement on foot in Canada, of which a paper by Dr. F. B. GILBRETH in the *Canadian Journal of Medicine and Surgery* for July, 1916, was an index, to investigate the hospital from the standpoint of efficiency by means of the same methods of study as have been applied to great industrial concerns. Dr. GILBRETH finds that although the experience and skill of the hospital officer are of a very high degree, there is much lost in the application of them to the patient by the inefficient, indirect, or complicated modes of transference. Something of this obtains in our civil medical practice, and the medical practitioner must be on his guard in these times, when there is not more than enough of his skill and experience to go round, to see that his efforts do not get used up unavailingly, or fail to reach his patients unimpaired.

Annotations.

"Ne quid nimis."

PRACTICAL INSTRUCTION IN THE DIAGNOSIS AND TREATMENT OF VENEREAL DISEASES.

THE practitioner who wishes to keep abreast of the movement for radically dealing with venereal diseases will need some opportunity of practical instruction in their diagnosis and treatment unless he has already been in a favoured position in this respect. The instruction naturally divides itself into the methods of obtaining materials for diagnosis and the methods of administration of remedies when the diagnosis has been established. The taking of the materials is the smaller affair, but still of great importance. At institutions where it is done systematically the technique looks so simple that the onlooker may fail to appreciate the pitfalls which exist for the unwary. He must therefore lose no opportunity of practising the methods himself and of acquiring the "laboratory fingers" which are essential to success. To take a smear from the urethra for the detection of the gonococcus is not difficult. To procure a specimen of serum in a capillary tube from a suspected syphilitic sore demands a little care. When the report on this serum is negative the obtaining of some juice from a lymphatic gland draining the suspect area is required, and in this manœuvre the prospect of success is much enhanced by the injection of one or two cubic centimetres of saline into the gland, which is massaged before the sample is withdrawn. Practical methods such as these must be seen to be appreciated, as well as the venipuncture and lumbar puncture to obtain the fluids for the Wassermann reaction. At this stage, the materials being obtained and sent up for report, the practitioner can, if he choose, leave the matter. But if he does so he will never share in Schaudinn's joy when he first saw the Spirochæta pallida. As may be read in Neisser's obituary notice in another column, this great discovery, to which he had approached so close himself, was made in his laboratory during his absence in Java. Finally, the technique of administration, both intravenous and intramuscular, of remedies in syphilis requires little apparatus or technical skill, but rather the strict observance of details, many of which can only be learnt by practical experience, and rapidly learnt in places where the methods are practised in routine on a large scale. Under these conditions the intramuscular injection of mercury almost suggests a very well-ordered circus, and the administration of 50 intravenous doses of salvarsan or luargol can be covered in an hour and a half in a room large enough for three recumbent patients. For the neosalvarsan, which is at present the only colloid arsenic preparation which can wisely be administered intramuscularly, we are still unfortunately dependent upon captured supplies. In large centres where arrangements for treatment already exist the practitioner can—as we have noted is the case in London—obtain his practical instruction before the cliniques under the new scheme are instituted, and he will be well advised to do so. The chairman of the London County Council stated at the recent Mansion House meeting that the complete scheme for London and the Home Counties should come into force early in the new year. In other centres, where building, equipment, and pathologist must first be found, some delay is inevitable, but should, in the interests of everyone, be made as short as possible. We welcome, therefore, the early appearance of a scheme such as that of the borough of Portsmouth, and shall hope to give from week to week the essentials of this and other schemes in so far as they include novel methods and arrangements.

ANÆSTHETICS IN MILITARY HOSPITALS.

VARIOUS correspondents have addressed us lately upon the choice of anæsthetics and of methods by which they shall be administered in military hospitals. There are several reasons why the question cannot be answered exactly along the lines of ordinary practice. The principles according to which anæsthetics and methods are selected remain the same as in civilian hospital practice, but the personnel of the patients introduces new features. Thus, to some extent in base hospitals abroad, and to a very large extent in the military hospitals here, the patients are young men in first-rate condition. They are, from the anæsthetist's point of view, difficult subjects because of their muscularity and fitness. On the other hand, large numbers of the patients in the military hospitals nearer the fighting line are men in a condition of shock, of exhaustion, or of serious sepsis. To anæsthetise such patients is never difficult; the difficulty is, on the other hand, not to add to their damage. The contrast between the two classes may be stated

broadly as being that the first are anæsthetised with difficulty but recover with ease; the second are easily anæsthetised but much more likely to suffer afterwards. It is particularly in the case of the latter, men who are bodily and perhaps also mentally greatly depressed or suffering from septic poisoning, that some of the newer methods of anæsthesia are very valuable. It is in these cases that intravenous administration of ether or of alcohol, or prolonged administration of nitrous oxide combined with preliminary morphia and atropine, are often to be preferred to simpler and older methods. In such cases chloroform is particularly undesirable, as Colonel J. Campbell points out in our issue of Sept. 30th, and we would add a caveat against the adoption of this anæsthetic as a routine amongst the healthy patients of the other class alluded to. It would be a pity if the comparative convenience of this agent were allowed to weigh against its undoubtedly easier association with danger in the selection of a routine anæsthetic. Where the administrators are men of wide experience the anæsthetic and the method become of less importance. As one of our correspondents writes, "it is not the anæsthetic, it is the way it is given," and this is of course very true; but in making suggestions that may be widely followed we must bear in mind that many of those who may follow them are bound, in the nature of the case, to be men to whom anæsthetic work has not hitherto fallen in large quantity. For them the first essential is to secure safety, and for that purpose their mainstay must be ether. It is probably the comparative tediousness of induction by the open method in the case of strong healthy men, and the difficulty often of maintaining complete relaxation, that turn the commencing anæsthetist from ether. Here we may draw attention to the use of ethyl chloride in the course of induction, and support the suggestion of one of our correspondents that this agent might with advantage be much more frequently employed. Moreover, in induction in strong subjects the administrator need not hold himself academically bound to a pure open method; such patients will suffer no inconvenience, and everybody else concerned will be greatly relieved, by a brief use of the wide-bore Clover.

A NEW FORM OF X RAY TUBE.

IN a supplement to the *Scientific American* there is a description of a new form of X ray tube that may prove to be an improvement on that introduced by Mr. Coolidge. The essentially new feature is that the filament producing the necessary electrons, instead of being in the centre of the cathode itself, is mounted in an accessory bulb placed immediately behind the cathode, the latter being provided with a central hole through which the electrons from the filament are made to pass. This hole being a small one the electrons fall on the anticathode in a correspondingly small dense bundle giving a sharp focal point from which the X rays emerge, and an almost complete freedom from stray radiations, which are more or less common to all tubes and a constant source of danger to all X ray workers. If the claims made for this Lilienfeld tube are borne out in practice there is no doubt that it will be a considerable improvement on anything that has been available up to the present, though the necessity for an auxiliary current to heat the filament still remains as in the Coolidge tube. We gather that the idea is of German origin, and further developments may not occur during the continuance of the war.

SOME ASPECTS OF THE THROAT AND NASO-PHARYNX IN THEIR RELATION TO GENERAL MEDICINE.

IN the presidential address delivered by Dr. Arthur Saunders to the West London Medico-Chirurgical Society on Oct. 6th, the throat was considered as a site of systemic general infection. He drew attention to some of the forms of catarrhal inflammation of the nose and throat, which, though at first mild in degree, might constitute if neglected a direct danger to health—nay, even to life—as well as to some of the more severe infections originating in those regions. But, even apart from such severe infection, acute inflammation of the adenoid tissue of the naso-pharynx is far from uncommon, especially in children, producing high fever and perhaps rigors, severe frontal and occipital headache, and even collapse. In the absence of any complaint of the throat the true nature of the condition may easily be overlooked, but a careful examination of the pharynx and naso-pharynx will usually disclose the cause of the symptoms. The lymphoid tissue of tonsils and adenoids which have undergone chronic irritation fro.. infection is left damaged and impaired to resist a future invasion. Moreover, a morbid condition of the mucous membrane of the fauces affords a more suitable soil for the development of many infectious diseases. Dr. Saunders especially referred to diseases which, constantly occurring in this country as sporadic cases, occasionally assume a virulence and infectiousness which lead to their distribution in epidemic form such as cerebro-spinal fever and acute poliomyelitis Investigations as to the prevalence of "carriers" in the distribution of cerebro-spinal fever, especially when the disease is epidemic, have brought out some remarkable facts. It would appear that at least in epidemic times the number of carriers who do not themselves become infected with the disease is very large. There appear to be grounds for the belief that chronic catarrhal conditions of the naso-pharynx may be associated with the persistence of the "carrier" condition. Dr. Saunders is of the opinion that this last sentence contains the expression of a more general truth than is suspected, and that close investigation and a wider experience will show that catarrh of the mucous membrane *does*—the italics are Dr. Saunders' and we adopt them—favour the reception, persistence, and multiplication, with consequent increased opportunity and incidence of infection, in the case of cerebro-spinal fever, as in diphtheria and probably many other diseases. Dr. Saunders is of the opinion in acute poliomyelitis again there is little doubt that the throat and naso-pharynx are one of the chief sites of entrance of the virus into the system. From what has been said it follows that by keeping the mucous lining of the throat, the naso-pharynx, and the mouth generally, healthy much can be done in the prevention of disease; and by prompt attention to local lesions and unhealthy conditions much can be done for the prevention of greater ills. Dr. Saunders urges fresh air and well-ventilated rooms, as well as the possession of what one may call a well-ventilated pharynx as important factors in the preservation of health. To these ends enlarged tonsils and adenoids undoubtedly should be removed in all cases where symptoms of obstruction, whether faucial, naso-pharyngeal, or Eustachian, are being produced. Tonsils, if diseased, although not obviously enlarged, especially if the infra-maxillary glands are chronically

enlarged, or if frequently the site of acute inflammatory attacks, should be removed. As infective organisms are frequently to be found in the deepest portions of the gland the method of removal should be complete and by enucleation.

BORIC ACID IN CREAM.

THE amending Order in regard to milk and cream regulations issued last week by the Local Government Board places the question of the use of boric acid as a preservative of cream on a definite basis. The regulations hitherto permitted the use of boric acid in cream so long as the presence of this preservative was declared, but there was no limit laid down as to the quantity of boric acid added. The amending Order, while still requiring a "declaratory label," does not permit the use of more than 0·4 per cent. boric acid by weight of the preserved cream. The Order also requires that the label on the cream so preserved shall bear the words "not suitable for infants or invalids." In the case of hydrogen peroxide being used as the preservative, the label is required to be drawn up in the same terms, but then no statement is demanded as to the quantity of the peroxide present.

THE OUTBREAK OF ACUTE POLIOMYELITIS IN NEW YORK.

UP to the last available date of record there have been in New York City and the adjacent States of New York, Connecticut, Massachusetts, New Jersey, and Pennsylvania the following number of cases and deaths:—

	Cases.	Deaths.
New York City (Sept. 30th)	9,029	2286
New York State, exclusive of New York City (Sept. 14th)	2,785	318
Connecticut (Sept. 18th)	677	Not reported.
Massachusetts (Sept. 19th)	671	95
New Jersey (Sept. 19th)	3,495	775
Pennsylvania (Sept. 20th)...	1,278	313
	17,935	3787

Amid all the ignorance as to the means of distribution of the virus, and the inconsistence of experience in different epidemics, climates, and continents, two facts in relation to medical experience in New York City stand out with striking clearness. They have been pointed out to us by Dr. Haven Emerson, Commissioner for the Department of Health in New York, who writes as follows:—

1. We have had no case among the 30,000 children in institutions for orphans, &c., in New York City. By institutions I do not mean hospitals or such places as day-nurseries, but the permanent homes of children outside of families. These institutions are under the supervision of the Department of Health, and we excluded all visitors at the beginning of the epidemic and maintained as usual the two weeks' quarantine for all children on admission—i.e., two weeks for isolation and observation before admission to the general living rooms, dormitories, and dining rooms. These institutions have the same water, pasteurised milk, and the same food as other children. They are no more protected against flies and mosquitoes, but are probably less afflicted with fleas and bed-bugs than many poor homes. Not a single case up to date, and the children are of all the most susceptible ages.

2. No case has been found on Barren Island, an island in Jamaica Bay, Borough of Brooklyn, where 1300 people live, and upward of 350 children. All city garbage is rendered on the island, also all dead animals are reduced to their commercial elements. There is no general water-supply; the water is from shallow wells. No sewerage, no roads, no local garbage removal, little good sanitation in or out of homes, abundant flies and mosquitoes, and an ignorant population of low-grade Poles, Italians, and coloured people working in and about the rendering plants. They are geographically and socially isolated from all but the rarest contact with the rest of the city.

It is obvious from the experience in New York and elsewhere that many of the facts upon which an intelligent and logical sanitary control of acute poliomyelitis can be based are still to seek.

PETECHIAL ERUPTIONS IN CAMP FEVERS.

DURING the present campaign attention has been drawn to the frequency with which signs of cutaneous hæmorrhage are met with in troops at the front during various infectious diseases, especially typhoid fever, giving rise at first to serious doubt as to the differential diagnosis from cases of typhus. Last August, while inspecting a sanitary station where troops from various sectors were concentrated, Dr. G. d' Ormea and Dr. M. Segale[1] found five cases with symptoms of severe typhoid and a diffuse petechial eruption which appeared between the fourth and fifth day from the apparent onset of the disease. These subjects had been inoculated against typhoid. Blood-cultures were made in three of these patients: in one the organism of paratyphoid B was isolated, in another typical colonies of B. typhosus; the third culture gave a negative result, probably owing to lack of sufficient material. In two of these cases positive evidence of typhoid enteritis at the middle of the second week was found. The same observers, working in another part of the front, noticed, in a large number of necropsies, frequent manifestations of cutaneous hæmorrhages more or less extensive in patients dying not later than between the tenth and fifteenth day of a disease which clinically ran the course of a continuous or subcontinuous fever. The necropsies and bacteriological investigations in these cases confirmed the presence of typhoid, in a large number with typical forms of Eberth's bacillus and sometimes with that of paratyphoid B. These cases, although not very numerous, were sufficiently striking, since they led to the suspicion of petechial typhus, and were, on the contrary, ordinary typhoid, often severe, in both inoculated and non-inoculated or cases of paratyphoid B. Petechial eruptions in typhoid are of extreme rarity in ordinary civil practice, and their occurrence with relative frequency in camps leads to the supposition that there are certain conditions inherent to the surroundings which favour their occurrence, the most probable explanation being that they are connected with hæmovascular instability consequent on a defective régime to which soldiers are exposed, without excluding as contributory causes over-exertion and nervous exhaustion. Widal in 1915 insisted on the absolute necessity of serological examination before diagnosing petechial typhus in order to exclude error with regard to typhoid, and Dr. d' Ormea and Dr. Segale emphasise the same point. They also draw attention to the analogy between these petechial forms of typhoid and the cases of diarrhœa and trench nephritis as having some probable relation to the diet of soldiers at the front, which contains an excess of animal food in proportion to cooked or raw vegetables.

THE autumn session of the General Council of Medical Education and Registration will commence at 2 P.M. on Tuesday, Nov. 28th next, when the President, Sir Donald MacAlister, K.C.B., M.D., will take the chair.

[1] Giornale di Medicina Militare, May, 1916. Tipografia Enrico Voghera, Rome.

MEDICINE AND THE LAW.

A Serious Baby-farming Case.

AT the recent session of the Central Criminal Court a woman named Richardson was sentenced to five years' penal servitude, after pleading guilty to charges of theft and of obtaining by false pretences sums of money from three persons who had entrusted infants to her care. The practice of the prisoner in connexion with baby-farming was to receive a substantial sum upon the undertaking that she would take care of a child, and then to get rid of the infant to someone else with little or no cost to herself. In one of the cases before the court she had received £8 from the mother, an unmarried woman, and on the same day had left the baby with another woman asking her to look after it for an hour or two, but had never returned for it. In another instance a charge of manslaughter had been brought against two women with whom she left a child which soon afterwards died, but the women were acquitted. In the third case the infant had been received by the prisoner, who had agreed to look after it, but the child had disappeared and she had refused to give any information by which it could be traced. The attention which at the present time is being directed to the importance of the preservation of the lives of infants lends additional interest to such cases, and the police are to be congratulated upon having put a stop to Mrs. Richardson's activities for some time.

The Property in a Prescription.

Points of considerable interest to the medical profession were raised in a recent action brought in the Honiton county court against Messrs. Hinton and Lake, a firm of druggists at Sidmouth, by Mr. H. Le Brasseur. The plaintiff's wife consulted Mr. C. W. Grant-Wilson, who gave her a prescription which she took to the defendants to be made up. The prescription was not returned to her, and her husband asked that it should be, but his request was refused, the defendants saying that they had undertaken, at the request of Mr. Grant-Wilson, not to return his prescriptions to patients unless he expressly authorised them to do so. In the case in question Mr. Grant-Wilson refused to allow the prescription to be returned, but afterwards enclosed a copy of it to the plaintiff when sending him a receipt. The plaintiff claimed the return of the prescription, or 15*s.* as its cost. Mr. Grant-Wilson, in his evidence, stated that the course adopted by him with regard to prescriptions was taken for the protection of the public, and he illustrated the danger of allowing prescriptions to be retained by the patient by saying that not infrequently a medicine ordered for an adult was given, without any medical man being consulted, to an infant. He had requested druggists to inform him whenever a patient asked for the return of a prescription, and he made a practice of writing on prescriptions which might properly be handed back without question the words, "Return to patient." The solicitor for the defendants pointed out that the prescription was of no value to them and that they were only contesting the case on the question of principle and in order to keep faith with the medical profession and with Mr. Grant-Wilson. His honour Judge Lindley held that no property in the document had passed to the plaintiff, as the prescription had only been handed to the patient in order that it might be conveyed by her to the druggists to be made up instead of the medical man himself sending it. The action therefore failed and the claim was dismissed with costs.

R. v. *Burdee.*

This case, in which, as already noted in THE LANCET of Sept. 16th, p. 531, an unqualified person, Henry Burdee by name, was sentenced to 12 months' hard labour for manslaughter after having "medically" treated a woman who died in consequence, came before the Court of Criminal Appeal recently. It will be remembered that Burdee applied a so-called "cold-water cure" combined with starvation to his unfortunate patient without having made any examination to assure himself that she was fit to undergo such an ordeal, and that the medical evidence showed that death was due to disease of the heart accelerated by lack of food. After hearing argument to the effect that there was no evidence of such gross negligence or criminal inattention as would justify a conviction for manslaughter, the court reduced the sentence to 12 months' imprisonment in the second division, but held that there was ample evidence to support the conviction. Mr. Justice Darling in delivering judgment said that if a person, whether a qualified medical practitioner or not, professed to deal with the life or health of any person, he was bound to have competent skill to perform the task. The convict held himself out as qualified to perform certain work, and he was bound to treat his patients with care and attention. The appellant had no medical knowledge and the evidence showed that he was ignorant of anatomy. He had a stereotyped treatment which he advised without any consideration of the patient's condition. The conviction must therefore stand. The conclusion thus arrived at must be regarded as satisfactory, and the case is likely to be cited upon similar occasions for some time to come when a quack undertakes the treatment of a patient who dies. It is to be regretted that the negligence of an unqualified person treating disease is not likely to become the subject of a criminal charge under this precedent except in those cases in which death may be the result of his attentions. It is not for the sake of the medical profession that better protection is required, but for the sake of the public.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Physicians of Ireland.

THE annual meeting of the President and Fellows of the Royal College of Physicians of Ireland was held in the College Hall, Kildare-street, Dublin, on St. Luke's Day (Oct. 18th). The following elections were made:—President: Dr. Joseph O'Carroll. Vice-President: Dr. H. T. Bewley. Censors: Dr. Bewley, Dr. Martin Dempsey, Dr. W. A. Winter, and Dr. B. Solomons. Examiners for the Licence to practise midwifery: Dr. E. Hastings Tweedy and Dr. Spencer Sheill. Additional Examiners to take the place of an absent Censor or Examiner: Medicine, Dr. W. Boxwell; Medical Jurisprudence and Hygiene, Dr. Falkiner; Midwifery, Dr. Spencer Sheill. Supplemental Examiners under the Conjoint Examination Scheme: Biology, Dr. Nesbitt; Chemistry, Dr. Ninian Falkiner; Physics, Dr. W. G. Harvey; Physiology, Dr. H. C. Earl; Anatomy, Dr. R. J. Rowlette; Pathology, Major F. C. Purser; Pharmacy, Materia Medica, and Therapeutics, Dr. George Peacocke; Medicine, Professor T. G. Moorhead. Examiners for the Conjoint Diploma in Public Health: Hygiene, Dr. S. T. Gordon; Bacteriology, Dr. Earl; Sanitary Law and Vital Statistics, Dr. Ninian Falkiner; Meteorology, Dr. J. A. Matson. Examiners for the Membership: Clinical Medicine, Dr. Bewley and Dr. Dempsey; Practice of Medicine, Dr. Winter and Dr. Nesbitt; Pathology, Dr. Earl and Dr. O'Sullivan; Obstetrics and Gynæcology, Sir Andrew Horne and Dr. Hastings Tweedy. Representative of the College on the General Medical Council: Sir John W. Moore. Representatives of the College on the Committee of Management: Dr. Walter G. Smith, Sir John Moore, and Dr. T. Percy C. Kirkpatrick. Treasurer: Dr. Bewley. Registrar: Dr. Kirkpatrick. Librarian: Mr. Robert Phelps.

The Royal Victoria Hospital, Belfast, and the War.

The inaugural address of the present session was delivered on Oct. 19th, in the hall of the King Edward VII. Memorial, to the students attending the clinics of the Royal Victoria Hospital by Professor J. A. Lindsay, who delivered a wise and spirited homily on the broad relations of medical men to the sick. At the close of the address the chairman of the medical staff of the Royal Victoria Hospital, Sir John Byers, referred to the part that the institution was taking in the present crisis. One hundred of the beds, he said, were being retained for wounded soldiers and officers. Six of the members of the visiting and auxiliary staff and 180 of their former students (many of them old house surgeons and house physicians) were now on military service, as well as three of the sisters and 17 of the nurses. Eight of the old students had been killed in action or had died when on service. Thirty-two distinctions had been conferred on members of the staff and former students. Of these, 18 were mentioned in despatches, 9 had obtained the Military Cross, 2 the D.S.O., 1 the C.M.G., 1 the C.B., and 1 (Major

J. A. Sinton, I.M.S.) the Victoria Cross. Among those mentioned in despatches was Lieutenant-Colonel Sir David Semple, who, since 1913, had been Director-General of the Public Health Department of Egypt. Miss Bostock, the lady superintendent of the Royal Victoria Hospital, has been decorated by the King with the Red Cross (First Class).

Irish Doctors of Military Age.

At a meeting of the Omagh guardians, held on Oct. 21st, a letter was received from the Local Government Board, to the effect that, whilst adhering to the principle already announced, not to sanction a doctor of military age to any position in the Poor-law medical service, so long as a practitioner of non-medical age was available and otherwise suitable for the duty, they had no option but to approve of the temporary appointment of Dr. D. F. Murnaghan in the Omagh No. 1 Dispensary District, as they were not in a position to suggest an alternative arrangement suitable to the exigencies of the case. They suggested that as the term of employment might be prolonged the guardians should arrange the remuneration at the fixed salaries attached to the medical officership, instead of £4 4*s.* weekly. The Board also signified (for the same reasons) their approval to the temporary appointment of Dr. Murnaghan as workhouse medical officer.

Oct. 23rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Preventive Treatment of Post-operative Peritonitis.

To prevent the occurrence of peritonitis after laparotomy in cases where septic foci are present M. Chaton employs a film of camphorated oil. His method is as follows. After opening the belly a certain quantity of camphorated oil is poured in and the patient placed in the position required by the operation; the incision is closed and a dozen inspirations allowed, after which the operative compresses are applied; these absorb any excess of oily fluid. The oil obstructs the lymphatic channels of absorption, hinders the adhesion of loops of gut, and permits of prolonged drainage, besides playing the part of a cardiac tonic. Ampoules of 25 and of 10 c.c. are employed, and 300 c.c. of a 1 per cent. solution of camphor can be used without inconvenience. The author has obtained encouraging results by this method.

Prevention of Tetanus by the use of Antitetanic Serum.

Before the Academy of Medicine M. Netter has laid stress on the services of antitetanic serum, recalling the excellent results obtained from its use in the United States of America. On the occasion of the jollifications which take place each year on the national fête in 1903 the number of wounded citizens amounted to 4449, and of these 417 acquired tetanus. Six years later in 1909, after the practice of antitetanic serum injection had been introduced, a larger total of casualties included only 150 cases of tetanus. During subsequent years the number of cases has continued to diminish, reaching zero this year. M. Capitan, in continuing the discussion, emphasised the advantage of high dosage. He considers that in severe infected wounds, or when a projectile remains embedded in the tissues, the usual preventive dose of 20 c.c. should be increased to 30 or 40 c.c., to be repeated in case of need.

A New Treatment for Gunshot Wounds.

Professor Pierre Duval, at present on active service, recently showed before the Society of Surgery a series of 12 men severely wounded on the Somme front. Although the wounds were such usually intractable ones as compound fracture of the knee, they had recovered in two or three weeks without fever, drainage, ankylosis, or plaster bandage, the healing of the wounds even taking place by first intention. These results, which much impressed his audience, were obtained by methods in complete contrast to those usually practised. With the shortest possible delay after the infliction of the wound M. Duval opens up freely the gunshot track, as well as all other tracks, cleans the surface with ether, and deliberately excises the whole wound, cutting for an extent of 1 or 2 cm into healthy tissue. Renouncing, in short, antisepsis and any attempt to destroy the imported microbes, he treats the whole neighbourhood of the infected injury as he would a malignant tumour by simply removing it. After finding himself in entirely healthy tissue he sutures the synovial membrane, reunites the ligaments, and brings together the edges of the wound without drainage. The results have been surprising; he has been able to dispense with bandages, irrigation, and the drainage of prolonged discharge. At the same time, the rapid return of function is very striking. One of the wounded men, who was already walking with the aid of a stick, had been hit on the knee three weeks before by a fragment of shell which penetrated the knee-joint, a type of wound which up till now has generally resulted in ankylosis when death did not supervene from a rapid infection. The method is one the wider application of which appears likely to modify considerably our treatment of gunshot wounds.

Treatment of Severe Burns.

M. Kirmisson also showed before the Society of Surgery four patients of M. Barthe de Sandfort treated with ambrine[1] for severe burns of the face, trunk, and upper limbs. The burns were seen to be supple and with little or no tendency to contraction. The mode of dressing employed by M. de Sandfort, thanks to which M. Michaux also obtained equally good results, had, above all, the advantage of suppressing or greatly diminishing pain and expediting cicatrisation. M. Toussaint also reported excellent results with ambrine in the severe burns under his care.

A Medical Victim of the X Rays.

Dr. Ménard, the well-known director of the electro-radiologic service of the Hôpital Cochin, has just had his index finger removed, another victim amongst workers in the cause of the advancement of radiology and of the care of the wounded. Some little time before the war he had already lost the index finger of his right hand. M. Malvy, the Home Secretary, has just decorated him with the Legion of Honour, and by a decision dated Oct. 6th the War Minister has awarded him the gold medal of preventive medicine.

CANADA.

(FROM OUR OWN CORRESPONDENTS.)

Surgical Hospitals for Canada.

THE Canadian Hospitals Commission has now organised a system for convalescent returned soldiers. It is still, however, considered advisable for the Canadian Government, acting through the Commission, to establish surgical hospitals right across Canada. These hospitals will receive soldiers able to take the voyage across the Atlantic and relieve the pressure in England. Many who are to undergo operation could, it is thought, be safely transported here to receive the necessary surgical treatment, and there are yet many skilled surgeons in Canada at the cities of Halifax, St. John, Montreal, Ottawa, Toronto, Winnipeg, Vancouver, and Victoria, who would only be too willing to do their part in military hospitals established at home for this purpose. When this is included in the programme of the Hospitals Commission, Canada will be in a splendid position to deal with all classes of returned soldiers.

Acute Poliomyelitis in Ontario.

Infantile paralysis is spreading in Ontario. The provincial health authorities are considerably concerned, and are contemplating steps to deal more rigorously with the situation. It may be found necessary to close the kindergarten schools and the moving-picture shows to children under 14 years of age. During the month of September there were 49 cases of the disease in the province of Ontario and 5 deaths, while in the month of August there were 44 cases and 5 deaths. In July the record was 20 cases and 3 deaths. The epidemic seems to be more or less general and covers different parts of the province. There was one case in a man 50 years of age. Dr. Roberts, the medical officer of health for Hamilton, where there have been at least a dozen cases, has recently issued an order that children shall not be admitted to any theatres in that city.

Treatment of Diphtheria in the Alexandra Hospital, Montreal.

It is ten years since this hospital was opened in Montreal, and all cases of diphtheria are placed directly under the

[1] See THE LANCET, 1916, vol. i., p. 1187.

care of the medical superintendent, who is selected after receiving special training in infectious diseases hospitals in the large cities of America. But hospital treatment of diphtheria is not obligatory in Montreal. Dr. H. B. Cushing and Dr. E. V. Murphy have reported[1] upon 2208 patients with diphtheria treated in the hospital during the ten years of its existence. Five per cent. gave a history of previous attacks of diphtheria. Two per cent. occurred in the first year of life, 5 per cent. in the third year, 9 per cent. in the fourth year, 10 per cent. in the fifth year, and then a steady diminution in the percentage cases until the fifteenth year, after which only scattered cases occurred up to the sixtieth year. Among the attendants 51 cases of diphtheria occurred; only 30 of all other infectious diseases altogether. There were no fatalities in the 51 attendants with the disease, and no attempt was made to immunise the attendants. In all cases the diagnosis was based on routine cultures taken on admission. Diphtheria causes about 200 deaths each year in Montreal, and it is still the most fatal contagious disease in the city. Before 1900 the mortality in all published statistics was from 30 to 40 per cent.; since the use of antitoxin has become general it has sunk to 10 per cent., but it is rarely, even in institutions, below this. In the Alexandra Hospital in ten years there have been 166 deaths, or 7½ per cent., making no deduction for those dying immediately on admission. In the year 1915 there were 417 cases and 21 deaths, a mortality of 5 per cent. The laryngeal cases were as usual the most fatal. There were 205 cases where intubation or tracheotomy was necessary, and of these 55 died. In 1915 there were 31 cases of intubation with 5 deaths. Apart from the laryngeal cases the septic and the hæmorrhagic cases raised the mortality. Of these there were 12 cases, and all died. Cardiac disturbance, noted in the total cases in 10 years, amounted to 109 cases; albuminuria occurred in 342 cases. Antitoxin is regarded as an absolute specific for the disease, the only cases lost being those admitted too late for treatment or those with some fatal complication. As to any bad results of antitoxin, no record of true anaphylactic shock or death occurred. The routine treatment is to give one large dose on admission, and repeat only in serious cases, or if the membrane extends subsequently, or if there is no improvement in 24 hours. In 1000 consecutive cases only one dose was given in 70 per cent., while 30 per cent. required one or more additional doses. Usually 3000 to 4000 units are given in mild and early cases; 6000 to 8000 units in more serious cases or when the disease has lasted over 48 hours; 10,000 to 12,000 units in all very serious cases. In 1000 cases the average total dose was between 6000 and 7000 units. The low mortality has apparently justified these doses. One essential in the treatment is to preserve the strength of the patient. Dobell's solution is used to cleanse the throat. Absolute rest in bed in all cases is insisted on, and the diet is milk and then soft foods. Ice-collars are used for adenitis, two hours on and two hours off. After two weeks discharge cultures are taken and the patients leave after two negative cultures. The average stay in the hospital was 21 days.

Tuberculosis among Canadian Troops.

A conference was held in Ottawa, Canada, under the supervision of the Canadian Hospitals Commission, to deal with the question of tuberculosis amongst Canadian troops. There are nearly 400 tuberculous soldiers in the hospitals set apart for these cases, and of this number about one-half have been overseas. Dr. Alfred Thompson, M.P. (Yukon), presided at the conference, the expert physicians summoned being Dr. A. R. Baldwin, Saranac Lake, N.Y.; Dr. Charles D. Parfitt, superintendent of Calydor Sanatorium, Muskoka; Dr. J. H. Elliott, Toronto; and Dr. J. R. Byres, Ste Agathe des Monts, Quebec.

Toronto, Oct 13th.

[1] For full report see the September issue of the Canadian Medical Association Journal.

INSANITARY CONDITIONS IN LINCOLNSHIRE.—At a meeting last week of the Branston rural district council at Lincoln it was stated that in parts of Boultham parish the contents of middens had not been removed for six months, and that school children were suffering in health from the omission. The surveyor stated that the condition had arisen through shortage of labour.

THE SERVICES.

ROYAL NAVAL MEDICAL SERVICE.

To be temporary Surgeons: C. N. Ratcliffe, G. P. Burr, W. B. Heywood-Waddington, C. McDonald, and C. H. Terry.

The following appointments have been notified:—Temporary Surgeons: J. F. M. Campbell to *Imperieuse*; C. P. Barber to *Pembroke*, additional, for Chatham Hospital; J. Brumwell, J. J. Carroll, and G. E. S. Ward to the *Victory*, additional, for Haslar Hospital; and H. E. Hall to *Vivid*, additional, for Plymouth Hospital.

ROYAL NAVAL VOLUNTEER RESERVE.

To be Surgeon: F. P. Nicholas.

ARMY MEDICAL SERVICE.

TERRITORIAL FORCE.

Lieutenant-Colonel (temporary Colonel) G. F. Gubbin relinquishes his temporary rank on vacating the appointment of Assistant Director of Medical Services.

ROYAL ARMY MEDICAL CORPS.

Major J. D. Richmond to be temporary Lieutenant-Colonel while in command of a Field Ambulance.

Temp. Lieut. J. B. Stephens to be temporary Major.

To be temporary Captains: J. M. Browne, H. K. Groff, C.A.M.C. (late Lieut., R.A.M.C.), E. R. Hunt, J. D. Barris, A. R. Munroe, C.A.M.C. (late Lieut., R.A.M.C.), and Temp. Lieuts. H. G. Kilner, C. R. M. Patison, W. Martin, V. T. W. Eagles, H. Stokes, J. R. B. Dobson, G. C. Ramsay, J. T. MacKenzie, R. M. Hume, D. C. McCabe-Dallas, J. Henderson, J. F. Adamson, S. A. McSwiney, J. Crowley, P. T. T. Macdonald, J. G. Cronyn, J. N. Macdonald, W. B. Thompson, C. R. B. Eyre, J. Donald, J. C. Bawden, C. H. W. Page, J. E. Rees, A. C. Falkiner, M. Polson, H. H. Stones, L. W. Crowe, W. H. Anderson, J. P. E. Henery, T. E. Mulvany, A. F. G. Kerr, E. H. Sheehan, and D. Welsh.

To be temporary Lieutenants: J. H. Thornley, W. J. Morrish, A. B. Ferguson, E. Howe, J. Langwill, G. E. Kinnersley, G. J. Farie, C. C. Kerby, T. W. Walker, L. Leslie, W. T. Morton, F. H. P. Wills, E. F. R. Alford, G. de Bec Turtle, A. Spong, T. M. Bellew, G. E. Macvie, J. R. Burnett, W. F. Addey, J. G. Shanklin, A. J. Hutton, G. M. B. Liddle, H. S. Jones, R. Franklin, A. M. Barlow, W. B. Harris, A. A. Murison, R. C. H. Francis, S. F. Cheesman, H. W. Ogle-Skan, J. E. Frere, N. Purcell, R. H. Beardsley, R. McAllister, G. W. Harrison, J. H. P. Vivian, J. G. G. Pigott, H. E. Girdlestone, J. Naylor, Surg.-Lieut. R. G. Griffin (Assam Valley Light Horse), W. G. McAfee, A. S. Ransome, H. G. Westropp, C. E. H. Paley, J. D. Pearson, H. P. W. Lincoln, J. Whitehead, M. Jenkins, A. G. Carment, E. R. Thompson, D. L. Carmichael, R. Brookes, L. Cairns, J. Paterson, M. J. Loftus, D. MacKinnon, E. T. Jameson, L. R. Fannin, W. J. Thomas, and G. A. Crowe.

Temporary Captains relinquishing their commissions: R. M. Allan, E. C. Lindsay, E. C. Black, H. A. Lunn, S. Ritson, W. W. Waller, R. W. Russell-Jones, A. A. Hudson, R. A. Jones, W. S. Fox, A. T. Patterson, G. R. Lawless, C. E. Lea, F. B. Dreyer, and T. C. Milligan. E. H. G. Duncan (on account of ill-health).

Temporary Lieutenants relinquishing their commissions: G. Adam, H. F. Sheldon, J. R. Irwin, R. Maclean, C. R. Learn, O. E. Ward, J. McKail, McW. Henry, J. Mallock, H. Tipping, A. J. Ferguson, J. Walker, L. S. H. Glanville, F. Simpson, A. R. Hobbs, A. G. Faulds, C. Robertson, A. L. Robinson, C. B. Gervis, N. McFarlane, H. M. Robertson, J. Gardner, E. F. Milton, W. C. Downs, J. M. Lang, and W. E. Ainley.

SPECIAL RESERVE OF OFFICERS.

The undermentioned to be Lieutenants: T. Crisp, from Edinburgh University Contingent, Officers Training Corps, and A. L. Giblin.

TERRITORIAL FORCE.

West Riding Field Ambulance: Captain G. E. St. C. Stockwell, West Yorkshire Regt., to be Captain (temporary).

Attached to Units other than Medical Units.—Capt. A. G. Lovett-Campbell to be Major. Capt. J. Owen to be seconded while holding a temporary commission in the R.A.M.C.

INDIAN MEDICAL SERVICE.

Major J. W. D. Megaw, professor of pathology at King George's Medical College, Lucknow, is appointed temporarily to hold charge of the office of the Principal in the College in addition to his own duties.

PROMOTION OF LIEUTENANTS OF ROYAL ARMY MEDICAL CORPS, SPECIAL RESERVE AND TERRITORIAL FORCE.

Lieutenants appointed to commissions in the R.A.M.C., Special Reserve and Territorial Force, on or after Oct. 15th, will not be eligible for promotion to the rank of Captain until they have completed 12 months' embodied service.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census 7565 births and 3919 deaths were registered during the week ended Saturday, Oct. 21st. The annual rate of mortality in these towns, which had been 13·5, 12·5, and 12·2 per 1000 in the three preceding weeks, further fell to 11·8 per 1000 in the week under notice. Among the several towns the death-rate ranged from 2·1 in Oxford, 4·5 in Acton, 5·1 in Hornsey and in Walthamstow, 5·8 in Ilford, and 6·1 in Aberdare, to 17·0 in Barrow-in-Furness, 17·1 in Derby, 17·3 in Rochdale, 17·9 in Lincoln, and 19·2 in Burnley.

The 3919 deaths from all causes were 152 below the number in the previous week, and included 306 which were referred to the principal epidemic diseases, against numbers declining from 594 to 367 in the five preceding weeks. Of these 306 deaths, 221 resulted from infantile diarrhœal diseases, 40 from diphtheria, 17 from measles, 11 from enteric fever, 10 from whooping-cough, and 7 from scarlet fever, but not one from small-pox. The annual death-rate from these diseases was equal to 0·9, against 1·1 per 1000 in the previous week. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had declined from 477 to 259 in the five preceding weeks, further fell to 221, and included 52 in London, 18 in Liverpool, 9 in Birmingham, and 8 each in Nottingham and Sheffield. The deaths attributed to diphtheria, which had been 40, 52, and 45 in the three preceding weeks, fell to 40, of which 11 occurred in London and 3 in Coventry. The fatal cases of measles, which had been 23, 25, and 21 in the three preceding weeks, fell to 17, and included 5 in London and 2 each in Liverpool, Manchester, and Tynemouth. The deaths referred to enteric fever, which had been 11, 13, and 10 in the three preceding weeks, numbered 11, of which 2 were registered in Derby. The deaths referred to whooping-cough, which had been 20, 15, and 23 in the three preceding weeks, fell to 10, and included 2 in Hull. The fatal cases of scarlet fever, which had been 10, 13, and 9 in the three preceding weeks, fell to 7, and included 2 each in London and Liverpool.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased from 980 to 1074 in the five preceding weeks, declined to 1067 on Saturday last; 125 new cases were admitted during the week, against 151, 159, and 167 in the three preceding weeks. The cases of diphtheria, which had risen from 1262 to 1410 in the five preceding weeks, further rose to 1429; 188 new cases were admitted during the week, against 193, 228, and 194 in the three preceding weeks. These hospitals also contained on Saturday last 61 cases of measles, 44 of whooping-cough, and 39 of enteric fever, but not one of small-pox. The 961 deaths from all causes in London were equal to the number in the previous week, and corresponded to an annual rate of 11·6 per 1000. The deaths referred to diseases of the respiratory system, which had been 130, 136, and 132 in the three preceding weeks, were again 132 in the week under notice.

Of the 3919 deaths from all causes in the 96 towns, 163 resulted from violence, 343 were the subject of coroners' inquests, and 1207 occurred in public institutions. The causes of 39, or 1·0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Leeds, Bristol, Bradford, Newcastle-on-Tyne, and in 56 other smaller towns. Of the 39 uncertified causes, 8 were registered in Birmingham, 6 in Liverpool, 4 in Gateshead, 3 in Preston, and 2 in Bootle.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an estimated aggregate population of 2,372,000 persons at the middle of this year 1026 births and 618 deaths were registered during the week ended Saturday, Oct. 14th. The annual rate of mortality in these towns, which had been 14·5, 13·6, and 15·1 per 1000 in the three preceding weeks, fell to 13·6 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 12·6, or 1·2 per 1000 above that recorded in the large English towns. Among the several towns the death-rate during the week ranged from 7·6 in Kirkcaldy, 8·3 in Leith, and 8·7 in Motherwell, to 14·4 in Paisley, 14·8 in Glasgow, and 18·2 in Dundee.

The 618 deaths from all causes were 67 below the number in the previous week, and included 61 which were referred to the principal epidemic diseases, against 75 and 92 in the two preceding weeks. Of these 61 deaths, 30 resulted from infantile diarrhœal diseases, 16 from measles, 7 from scarlet fever, 4 from diphtheria, 3 from enteric fever, and 1 from whooping-cough, but not one from small-pox. The death-rate from these diseases was equal to 1·3, against 1·1 per 1000 in the large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 83, 50, and 66 in the three preceding weeks, fell to 30, and included 16 in Glasgow, 4 each in Dundee and Kilmarnock, 3 in Motherwell, and 2 in Greenock. The deaths referred to measles, which had been 4, 5, and 8 in the three preceding weeks, further rose to 16, and comprised 13 in Dundee, 2 in Glasgow, and 1 in Edinburgh. The fatal cases of scarlet fever, which had been 3, 6, and 7 in the three preceding weeks, were again 7 in the week under notice, and included 3 in Glasgow and 2 in Aberdeen. The deaths attributed to diphtheria, which had been 5, 9, and 5 in the three preceding weeks, numbered 4, of which 2 occurred in Glasgow. Of the 3 fatal cases of enteric fever, 2 were registered in Kilmarnock and 1 in Edinburgh. The death from whooping-cough occurred in Coatbridge. In addition to the above deaths, a fatal case of typhus was recorded in Dundee.

The deaths referred to diseases of the respiratory system, which had increased from 45 to 94 in the five preceding weeks, fell to 90 in the week under notice, and were 42 below the number registered in the corresponding week of last year. The deaths from violence numbered 17, against 25 and 36 in the two preceding weeks.

In the 16 largest Scotch towns 1108 births and 589 deaths were registered during the week ended Saturday, Oct. 21st. The annual rate of mortality in these towns, which had been 13·6, 15·1, and 13·6 per 1000 in the three preceding weeks, fell to 13·0 per 1000 in the week under notice. Among the several towns the death-rate ranged from 2·3 in Clydebank, 5·3 in Hamilton, and 7·6 in Kirkcaldy, to 13·8 in Paisley, 15·3 in Dundee, and 15·4 in Kilmarnock.

The 589 deaths from all causes were 29 below the number in the previous week, and included 53 which were referred to the principal epidemic diseases, against 92 and 61 in the two preceding weeks. Of these 53 deaths, 29 resulted from infantile diarrhœal diseases, 12 from diphtheria, 4 from whooping-cough, 3 each from enteric fever and scarlet fever, and 2 from measles, but not one from small-pox. The death-rate from these diseases was equal to 1·2, against 0·9 per 1000 in the large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 50, 66, and 30 in the three preceding weeks, were 29, and included 17 in Glasgow, 4 in Dundee, and 3 in Edinburgh. The deaths referred to diphtheria, which had been 9, 5, and 4 in the three preceding weeks, rose to 12, of which 4 were registered in Glasgow, 3 in Edinburgh, and 2 in Aberdeen. The 4 fatal cases of whooping-cough were slightly in excess of the average in recent weeks, but showed no excess in any particular town. The deaths attributed to scarlet fever, which had been 6, 7, and 7 in the three preceding weeks, fell to 3, and comprised 2 in Glasgow and 1 in Aberdeen. The 3 deaths from enteric fever, of which 2 occurred in Glasgow and 1 in Paisley, were equal to the average in the three preceding weeks. The fatal cases of measles, which had increased from 4 to 16 in the four preceding weeks, fell to 2, both of which were recorded in Dundee. In addition to the above deaths a fatal case of typhus was registered in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 72, 94, and 90 in the three preceding weeks, fell to 74 in the week under notice, and were 62 below the number registered in the corresponding week of last year. The deaths from violence numbered 26, against 36 and 17 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the registration district of Dublin 198 births and 135 deaths were registered during the week ended Saturday, Oct. 14th. The annual rate of mortality, which had been 15·6, 18·3, and 18·7 per 1000 in the three preceding weeks, fell to 17·7 in the week under notice, against 11·7 and 14·8 per 1000 in London and Glasgow respectively.

The 135 deaths from all causes included 32 of infants under 1 year and 35 of persons aged 65 years and upwards. Fourteen deaths (of infants under 2 years) were referred to diarrhœal diseases, 3 to enteric fever, 2 to whooping-cough, and 1 each to measles and diphtheria. The causes of 7 deaths were uncertified, and those of 4 others were the subject of coroners' inquests, while 58, or 43 per cent., of the total deaths occurred in public institutions.

During the same period 183 births and 102 deaths were registered in the city of Belfast. The deaths corresponded to an annual rate of 13·6, or 0·4 per 1000 less than in the previous week, and included 23 of infants under 1 year and 21 of persons aged 65 years and upwards. Nine deaths (of infants under 2 years) were referred to diarrhœal diseases, and 1 each to enteric fever, measles, and whooping-cough. The causes of 3 deaths were the subject of coroners' inquests, and that of 1 other was uncertified, while 24 of the total deaths occurred in public institutions.

In the registration area of Dublin 189 births and 133 deaths were registered during the week ended Saturday, Oct. 21st The annual rate of mortality, which had been 18·3, 18·7, and 17·7 per 1000 in the three preceding weeks, fell to 17·5 in the week under notice, against 11·6 and 13·7 per 1000 in London and Glasgow respectively.

The 133 deaths from all causes included 27 of infants under 1 year and 30 of persons aged 65 years and upwards. Three deaths were referred to enteric fever, 3 (of infants under 2 years) to diarrhœal diseases, and 1 each to measles, and scarlet fever. The causes of 5 deaths were the subject of coroners' inquests, and those of 4 others were uncertified, while 59, or 44 per cent., of the total deaths occurred in public institutions.

During the same period 173 births and 98 deaths were registered in the city of Belfast. The deaths corresponded to an annual rate of 13·1, or 0·5 per 1000 less than that recorded in the previous week, and included 18 of infants under 1 year and 18 of persons aged 65 years and upwards. Six deaths of infants (under 2 years) were referred to diarrhœal diseases, 2 to enteric fever, and 1 each to scarlet fever and diphtheria. The causes of 8 deaths were the subject of coroners' inquests, and 29 of the total deaths occurred in public institutions.

Obituary.

PROFESSOR ALBERT NEISSER.

BY the death of Professor Albert Neisser on July 30th Germany lost one of her greatest scientists, and the whole world is the poorer for the loss. Like so many of the most distinguished scientists of the last century in Germany, Neisser was of Semitic descent. He was born on Jan. 22nd, 1855, near Breslau, and was the son of Moritz Neisser, also a distinguished physician. Albert Neisser's career was associated with Breslau almost uninterruptedly. His medical studies were conducted in Breslau and Erlangen. In 1877 he received the M.D. for his thesis on "Die Echinokokkenkrankheit." In 1879 he drew attention to the presence in gonorrhœal discharge of certain cocci, whose characteristics were sufficiently distinctive to warrant their identification with the causation of gonorrhœa. He was attached as assistant to the Breslau University Hospital and Polyclinic for Syphilis and Diseases of the Skin under Oskar Simon, whose death in 1882 created a vacancy which was filled by Neisser, then only 27. Breslau's early recognition of Neisser's abilities was amply justified by subsequent events, and was rewarded by the loyalty he showed to his Alma Mater. He refused every offer of promotion elsewhere, including the succession to Lewin in Berlin in 1896. Under Neisser's supervision the primitive, prison-like buildings of the Allerheiligen Hospital were replaced in 1892 by a thoroughly up to date and fully equipped hospital. In 1902 he founded "Deutsche Gesellschaft zur Bekämpfung der Geschlechtskrankheiten." The discovery by Metchnikoff and Roux of the susceptibility of monkeys to syphilis in 1903 led Neisser in the following year to initiate a vast scheme of experimental study of syphilis in monkeys. Accompanied by his wife and two assistants, he started early in 1905 on his expedition to Java, where he remained several months, studying the conditions under which syphilis occurs in the monkey. It was during Neisser's absence from home that the Spirochæta pallida was discovered by Schaudinn and Hoffmann. Their observations were quickly confirmed in Java by Neisser. In conjunction with Bruck and Wassermann, Neisser contributed much of the spade work on which the reaction, now known as Wassermann's, is based. He travelled in Norway and Spain to study leprosy, and he contributed a vast amount of clinical and bacteriological observation to the study of syphilis. But his name will always be primarily associated with gonorrhœa; he was not only, as his countrymen affectionately call him, "the Father of the Gonococcus," but also a pioneer in the rational treatment of gonorrhœa. He insisted on the constant control of treatment by the microscope, he combated the indiscriminate use of astringents to the exclusion of other drugs, and he was the first to recommend protargol in gonorrhœa. For his experiment of injecting syphilitic serum into four healthy persons Neisser incurred the ill will of the authorities in 1900. He was publicly reprimanded and fined, and he does not appear to have been compensated for this unwelcome notoriety by any valuable observations from his daring and illegal experiments.

His health had been failing for some years, and he had suffered from diabetes for a long time. A few years before his death he fractured one thigh by a fall in a cellar; he was confined to bed for several months and never recovered his former vitality. He was also subject to nephrolithiasis, and in July of this year he insisted on travelling to Brussels to attend an exhibition, although he was suffering from renal colic, complicated by cystitis. On his return home he attempted to attend a meeting in Düsseldorf, but was forced instead to retire to Berlin where, on July 21st, he was operated on for a stone which had descended to the bladder. Two days later he returned to Breslau. Here sepsis and high fever developed, and he died on July 30th, having been comatose for a day.

RALPH BROWN, M.D., B.S. LOND., M.R.C.S. ENG., L.R.C.P. LOND.,

SENIOR ASSISTANT PHYSICIAN AND DEPUTY MEDICAL SUPERINTENDENT, BETHLEM AND BRIDEWELL ROYAL HOSPITALS.

ONE of a large family of sons, all serving their country, Ralph Brown had volunteered for a commission in the Royal Army Medical Corps, when his untimely death on Oct. 6th occurred from typhoid fever.

Ralph Brown was born in 1880 and educated at Sherborne School and University College, London, where he quickly showed brilliant promise. He became prosector of anatomy, and later gained the gold medal in materia medica and therapeutics. Owing to the fact that University College Hospital was in the process of being rebuilt, he transferred in 1903 to Westminster Hospital, where he gained the scholarship for third-year students. He took the English Conjoint Diploma in 1906 and graduated M.B., B.S. at the University of London in 1908. At Westminster he held in turn the usual resident posts, and later became house physician to Bethlem Royal Hospital, having decided to specialise in psychological medicine. He was appointed resident medical officer to Moorcroft Asylum, Hillingdon, but in 1911 he returned to Bethlem as junior assistant physician, becoming also assistant medical officer to King Edward Schools, London and Witley. In 1913 he took his Doctorate of Medicine by passing in psychology and mental diseases, and in 1914 was appointed senior assistant physician to Bethlem.

Of a quiet and retiring disposition, his kindness of heart and sympathetic manner were as obvious as his scientific attainments. The future would have held much success in store for him.

One of Ralph Brown's brothers is a prisoner of war and another was killed fighting in Flanders.

FRANCIS CLARE MELHADO,

SECRETARY-SUPERINTENDENT OF THE MIDDLESEX HOSPITAL.

WE regret sincerely the death of Mr. F. Clare Melhado, secretary-superintendent of the Middlesex Hospital, on Oct. 18th, at the age of 54. He had been connected with the Middlesex Hospital since 1879, and had held the appointment of secretary-superintendent since 1888. His loss to the institution will be most severely felt, for he had devoted all his energies to its welfare. Mr. Melhado had a large circle of friends, including the members of the Weekly Board, the consulting and acting staff, and numerous men who had been students of the hospital. His genial and courteous manner made him universally popular, and it was everywhere recognised that he was eager and willing to subjugate all other matters to the benefit of the hospital to which he was so devoted.

THE LATE MR. CHAUNCY PUZEY.

Mr. R. W. Murray, F.R.C.S., writes:—

May I be permitted to supplement the short obituary notice which appears in THE LANCET of Oct. 21st concerning my old friend Chauncy Puzey. Puzey made his reputation as a surgeon in the early antiseptic days, and was probably the first surgeon in Liverpool to prepare and use an absorbable catgut ligature. The basis upon which his reputation rested was his sound surgical judgment and well-thought-out opinion. He was by no means a bold surgeon or a brilliant operator. Before he undertook any operation, no matter how trivial, the reason for the operation was always carefully considered and the various steps thought out in detail. He was scrupulously clean in his methods and obtained excellent results. Puzey was never an ambitious man, and his deliberate and punctilious manner prevented him from ever acquiring a large consulting practice, but so highly was his opinion valued by those who knew him that had one of his colleagues been threatened with the loss of a limb he would not have consented to amputation being performed unless Puzey said it was really necessary.

Correspondence.

"Audi alteram partem."

ATMOSPHERIC CONDITIONS IN RELATION TO TRENCH FEVER.

To the Editor of THE LANCET.

SIR,—In continuation of the suggestion made by me in THE LANCET of August 19th that the atmospheric conditions in the trenches may be the cause of trench fever, I give in the accompanying table the atmospheric conditions at the Parc de Saint-Maur Observatory, Paris, for 11 hours continuously on July 17th, 1912:—

(A) *Hourly Atmospheric Conditions at the Parc de Saint-Maur Observatory, Paris, July 17th, 1912.*

(B) *Atmospheric Conditions which Raised Body Temperature in the Spinning and Weaving Sheds.*

(C) *Degree to which Temperature was Raised by Exposure in the Spinning and Weaving Sheds.*

	(A)					(B)			(C)		
	Temperature of air (°F.).		Drying power of air per 10 cub. ft.	Velocity of wind per second.		Temperature of air (°F.).		Drying power of air per 10 cub. ft.	Body temperature in mouth (°F.).	Pulse.	Respiration.
	Dry.	Wet.	Gr.	M.		Dry.	Wet.	Gr.			
1 P.M.	85·5	71·8	63·6	3	(b)	85·5	78·0	44·0	100·1	82	22
2 ,,	83·6	68·7	67·6	3		83·5	74·0	50·0	99·8	116	20
3 ,,	82·4	68·9	61·2	5		82·0	77·0	28·0	100·2	80	24
4 ,,	82·5	70·1	39·1	4		82·0	77·0	28·0	100·2	80	24
5 ,,	82·9	67·7	64·5	3		83·0	74·0	47·0	99·8	104	21
6 ,,	79·8	72·2	34·8	3	(a)	80·0	71·0	44·0	100·0	90	24
7 ,,	77·0	70·5	31·0	2		77·0	70·0	33·0	100·0	100	26
8 ,,	75·2	69·3	21·0	0		75·0	69·5	26·6	100·2	110	18
9 ,,	73·4	67·8	23·2	1		73·5	68·0	24·5	100·0	90	22
10 ,,	71·7	66·7	17·6	2		72·0	67·0	18·0	100·0	72	14
11 ,,	71·4	67·8	10·8	0		72·0	67·0	18·0	100·0	72	14

Conditions marked (*a*) will cause pyrexia; (*b*) will not cause pyrexia. In the experiment (B) no movement of the air was perceptible.

The record of atmospheric conditions at the Parc de Saint-Maur is taken from the "Annales du Bureau Central Météorologique de France," 1912, published by M. Angot, the Director. I have, however, converted the centigrade reading into Fahrenheit, and instead of giving the relative humidity of the air, I have given the wet-bulb temperature and the drying power of the air calculated from the dry-bulb temperature and the relative humidity. This I have done in order to render easier a comparison with the conditions which are known to raise body temperature in the humid cotton- and linen-weaving sheds in Lancashire and in Ireland.

In line with each hourly observation at the Parc de Saint-Maur I have placed a record of atmospheric conditions which so raised the body temperature of a considerable number of the operatives in the humid cotton-weaving sheds in Lancashire and in the humid linen-weaving sheds in Ireland. Comparing these atmospheres it is evident that the atmospheric conditions marked (*a*) at the Parc de Saint-Maur on July 17th, 1912, were *for six hours continuously* such as would cause pyrexia in many. For they present a greater impediment to loss of heat from the body, especially by evaporation, than the conditions in the cotton spinning and weaving sheds. But the latter raised the body temperature of many of the operatives to 37·7° C. (100·0° F.) or higher *in less than four hours*. Hence I conclude that the atmospheric conditions at the Parc de Saint-Maur from 5 P.M. to 11 P.M. on July 17th, 1912, were such as would cause a pyrexia of short duration in some.

It may be objected that even if the atmospheric conditions at the Parc de Saint-Maur are such as produce fever it does not follow that the atmospheric conditions in the trenches are similar. Such objection is reasonable and cannot be answered satisfactorily without actual meteorological observations in the trenches or in their vicinity. The nearest stations to the trenches at which suitable observations were recorded are, I am informed by M. Angot, Arras and Lille, and he adds that they are at the present moment lost.

It is probable, however, that the atmosphere of the trenches is more humid, from the proximity of the marshes in "No Man's Land," than the atmosphere of the Parc de Saint-Maur. Such greater humidity would present a greater impediment to loss of heat from the body by evaporation and would, the temperature and movement of both atmospheres being the same, raise body temperature more than the atmosphere in the Parc de Saint-Maur. But comparison of the Parc de Saint-Maur atmosphere with that in the cotton-sheds shows that for *six hours continuously* on July 17th, 1912, it was such as would raise body temperature above 37·7° C. (100·0° F.)—that is, it was such as would produce in many, in less than four hours, a pyrexia of short duration. This shows, at all events, that in France the atmospheric conditions in the summer are sometimes such as will cause fever.

For these reasons I think that the atmospheric conditions in the trenches and in their vicinity deserve investigation as a possible cause of a pyrexia of short duration with relapses, such as trench fever is described to be.

I am, Sir, yours faithfully,

MATHEW D. O'CONNELL, M.D. R.U.I.
Colonel, R.P.; late A.M.S.

Harrogate, Oct. 14th, 1916.

TRENCH PYREXIAS.

To the Editor of THE LANCET.

SIR,—In your issue of Sept. 9th there appears a short note on Trench Pyrexias, being a contribution to the etiology of what is popularly but quite incorrectly described as "trench" fever.

It is to the author's suggestions as to the causation of the disease that I should like to draw attention. He adduces (1) the trench rat, with which he presumably includes its accompanying parasites, and (2) reluctance on the part of the men to go to the latrines when in the trenches on account of the danger of being knocked over while there, with resultant constipation. I am afraid that neither of these suggestions will account for the facts. Last winter, while on the staff of a casualty clearing station, I made a study of cases of the type of disease alluded to as "trench pyrexias." I saw over 200 of them and made clinical memoranda on 50. While most occurred in men from the trenches a fair proportion of the patients had never been within 12 miles of the front line, had never seen a "trench" rat (not that he differs from any other), and had no cause to refrain from visiting the latrines as often as they wished. I cannot remember whether the author mentions lice as a possible source of infection. This has been suggested, but cannot be accepted, for I have known the symptoms to occur in men who had never suffered from pediculosis, among others in the staff of a D.D.M.S., who lived in a château with all modern conveniences.

As for my own cases, after sorting out paratyphoid cases (of which I saw only three), incipient pleurisy and pneumonia, and trench nephritis, I came to the conclusion that the remainder could be attributed to influenza in what (for I know not what reason) has been described as its "nervous" form. "Trench" pyrexias do not, I consider, differ in any way from those met with in civil practice.

My experience as to the course of the disease differed from that of the author in that I found that the pyrexia often lasted from five to ten days and sometimes longer. In those cases of more or less prolonged fever I found the subsequent prostration was often considerable. In fact, towards the end of my work with these cases I made it a rule to send on to the base all those who ran a temperature on the fifth day from the onset of the fever. I further found that relapses were of common occurrence.

The most marked clinical features of the disease as I saw it were the pains in the loins and shins and headache. The pains in the legs I found particularly hard to treat.

Trusting that you will pardon the disjointed nature of these remarks, and apologising for the enforced use of pencil,

I am, Sir, yours faithfully,

S. C. DYKE.

B.E.F., France, Sept. 22nd, 1916.

"ORTHOPÆDICS" AND PHYSICAL TREATMENT.

To the Editor of THE LANCET.

SIR,—More could and should be done to relieve the disablement of wounded soldiers, particularly of those who are discharged as no longer fit for military duty. In the medical and lay press there is some little confusion of terms. A demand is made for a wide extension of "orthopædic treatment" for the benefit of the classes just mentioned, and what is apparently intended is not alone surgical aid, but also the "combined physical treatment," by means of baths, massage, exercises, and electricity, which is being gradually introduced into this country, and which has been found so beneficial for the wounded. The word "orthopædics" is assuming a much wider meaning, since in the new military hospitals called by that name stiff limbs and wasted muscles are to form a large proportion of the cases treated.

With the precision of thought and language, which is so delightful in some of our continental colleagues, Dr. Delterre, the medical director of the Anglo-Belge Hospital for disabled soldiers at Rouen, defines the three departments of his work as (1) *interventions chirurgicales*, (2) *prothèse* (splints and artificial limbs), (3) *physiothérapie*. These are all regarded as independent branches of the medical art and are placed under the direction of experts, but for the case of wounded soldiers are considered essential and interdependent. In our country *interventions chirurgicales* and *prothèse* have attained a high position. The third, *physiothérapie*, as it is now practised, is a definite method of treatment applicable to the large majority of disabled soldiers. This method, or group of methods, being physical, has strong affinities with physical training and re-education. Therefore it pertains, not to the hospital ward, but to the camp or clinic. Its value and close connexion with training and industrial education have been recently proved in our own country at the Command Depôts of Heaton Park and Tipperary.[1]

A special committee of the Royal Society of Medicine (Section of Balneology) has for two years been studying the best means of applying these methods of treatment to the wounded in the British Islands. None know better than the committee how wide is the scope of this matter and how many are the problems involved in it. It may be gravely doubted whether physical treatment as it is now understood can be adequately given in the wards of orthopædic hospitals and even whether it is possible that the surgeons, who are so fully occupied with *interventions chirurgicales*, can give time or study to it.

It is submitted that the question for to-day is: How and where can these combined physical remedies best be provided for unknown numbers of wounded? Their great importance has now been generally admitted, and their special value in the care of disabled soldiers fully established. Surely it is an urgent necessity in the first place that a sufficient number of medical men should specialise in the study and administration of physical treatment, and it is most desirable that as the need for it increases throughout the country there should be no lack of men competent to undertake its supervision.

I am, Sir, yours faithfully,

London, Oct. 16th, 1916. R. FORTESCUE FOX.

THE PREPARATION OF STABLE COLLOIDAL ANTIMONY.

To the Editor of THE LANCET.

SIR,—Your correspondent, Dr. Upendra Nath Brahmachari, whilst referring to "the brilliant results" obtained by the use of colloidal metals, in THE LANCET of Oct. 21st, is in error in assuming that stable solutions of colloidal antimony are not to be obtained. The late Mr. Henry Crookes not only prepared a perfectly stable solution of colloidal antimony in the Crookes' laboratories as long ago as 1912, but that preparation (collosol antimony) is perfectly stable to-day, and exhibits most active Brownian movement. Moreover, the tests made by Mr. Henry Crookes showed that antimony was strongly inhibitory to such micro-organisms as the B. coli communis, B. prodigiosus, and the staphylococci, and the results of further experiments upon the B. phosphorescens (exhibited by Mr. Crookes to the Royal Society) showed antimony together with arsenic and silver at the head of a list of 22 metals in bactericidal effect.

In the absence of opportunity for clinical experiment its specific action in leishmaniosis was not then tested, as the properties of the collosols were not appreciated at that time. Since then, the Crookes Laboratories have been too much occupied with the production of other metallic colloids, and more recently with the collosols of iodine and sulphur, to deal comprehensively with collosol antimony, but a supply of this colloid—which has stood the test of four years and now exhibits ultra-microscopically equal stability and activity of Brownian movement to that occurring when it was first tested by Sir William Crookes in 1912—is still available. Moreover, being a chemically prepared colloid, it does not break down in the presence of electrolytes, as has been so amply proved in the case of the electrically prepared colloidal solutions.—I am, Sir, yours faithfully,

LEWIS STROUD, M.A. Oxon.

The Crookes Laboratories, 50, Elgin-crescent, W., Oct. 24th, 1916.

MEDICAL WOMEN AND EQUALITY OF PAY.

To the Editor of THE LANCET.

SIR,—With regard to a letter under this heading published in THE LANCET of Oct. 14th, I should like to suggest that at the present time it is the duty of the Government to get any work done at the lowest possible figure compatible with efficiency. If patriotic medical women would remember that thousands of men have been deprived of homes, incomes, and lives in order that the more fortunate of us may live, we might hear less of the injustice in giving women only £400 a year. We ought to be conscripted and put on a separation allowance. There is no justice in war, and those who are fighting get least, as far as I can see.

I am, Sir, yours faithfully,

KATHARINE M. MACKENZIE.

Ayrshire Sanatorium, New Cumnock, Oct. 24th, 1916.

"CLERGYMEN'S SORE-THROAT."

To the Editor of THE LANCET.

SIR,—The bad effects produced upon the throats of clergymen by speaking downwards have been long recognised by largyngologists and were first pointed out many years ago by Dr. Whipham. This fact will be found referred to in my text-book on "Diseases of the Throat, Nose and Ear," third edition, p. 54.

I am, Sir, yours faithfully,

Oct. 23rd, 1916. P. MCBRIDE.

FALLOPIAN TUBE FOUND IN FEMORAL HERNIA.

To the Editor of THE LANCET.

SIR,—In the year 1882 I had a similar case to the one reported in THE LANCET last week by Mr. E. G. Renny (on the right side) when I was dresser to the late Sir Henry G. Howse at Guy's. The patient was a single woman, aged 25 or 26. The sac when opened contained some omentum, and the fimbriated extremity of the Fallopian tube was covered by this. I feel sure that Sir Henry Howse must have placed this case on record—probably in the Guy's Hospital Reports.

I am, Sir, yours faithfully,

Northfleet, Kent, Oct. 24th, 1916. H. T. SELLS.

CHADWICK PUBLIC LECTURES.—The autumn programme of Chadwick lectures includes three lectures by Professor Wm. Stirling on Fatigue, and its Effects on Industry and Efficiency (Fridays, Oct. 27th and Nov. 3rd and 10th, at 5.15 P.M., in the Lecture-room of the Royal Society of Arts, John-street, Adelphi); three lectures by Dr. Charles Porter, medical officer of health of Marylebone, on The Health of the Future Citizen (Thursdays, Nov. 2nd and 9th, and Tuesday, Nov. 14th, at 3 P.M., in the Norwich Museum); a lecture by Dr. J. T. C. Nash, county medical officer of health of Norfolk, on Baby-Saving for the Nation (Monday, Nov. 20th, at 5 P.M., in the Hampstead Central Library, Finchley-road). All the lectures will be illustrated by lantern slides. Admission is free.

[1] See Major R. Tait McKenzie's paper on the Treatment of Convalescent Soldiers by Physical Means read before the Royal Society of Medicine, July 21st, and Mr. Cyril Jackson's letter on "Broken Soldiers" in the Times of Sept. 15th.

The War.

THE CASUALTY LIST.

THE following names of medical officers appear among the casualties announced since our last issue :—

Killed.

Capt. G. M. Levack, R.A.M.C., attached Oxford and Bucks Light Infantry, qualified M.B., Ch.B. Edin. in 1914, and at once took up Army work. He was with the Seaforth Highlanders for 12 months, and took part in several actions in which his battalion was engaged.

Capt. W. R. Pagen, R.A.M.C., attached East Kent Regiment, was educated at Durham University and at the London Hospital, and qualified in 1905. Previous to joining the R.A.M.C. he was in practice at Cockermouth, and was the medical officer of No. 1 District of the Cockermouth Union.

Captain R. E. Horkins, R.A.M.C., attached Royal Field Artillery, came over with the Canadian Expeditionary Force.

Lieut. S. A. Walker, R.A.M.C., attached Cheshire Regiment, came over with the Canadian Expeditionary Force.

Died.

Capt. W. Crymble, R.A.M.C., was educated at Belfast and at Dublin, and qualified in 1909. He had held appointments at the Down District Asylum and at the Royal Victoria Hospital, Belfast, and was also senior assistant medical officer at the Beckett-street Infirmary, Leeds. He went to France at the beginning of the war and was taken prisoner. He was released later and served in the Near East, where he contracted enteric fever, and died at Alexandria.

Wounded.

Lieut. P. S. MacLaren, R.A.M.C., attached Royal Scots.
Lieut. J. E. Thompson, R.A.M.C., attached Liverpool Regt.
Capt. T. I. Dun, R.A.M.C.
Major G. S. Mothersill, C.A.M.C., attached Canadian Infantry.
Lieut. A. Davidson, R.A.M.C., attached London Regiment.
Capt. J. C. Matthews, R.A.M.C., attached Liverpool Regiment.
Capt. S. A. Montgomery, R.A.M.C.
Capt. S. Miller, R.A.M.C.
Capt. J. E. Bruneau, R.A.M.C.
Lieut. P. G. Leeman, R.A.M.C.
Capt. R. Silcock, R.A.M.C.
Capt. J. H. Wood, C.A.M.C.
Capt. W. G. Grant, R.A.M.C., attached Essex Regiment.
Capt. J. J. Field, R.A.M.C.
Capt. R. R. Scott, R.A.M.C.

Previously reported believed taken Prisoner at Kut-el-Amara, now reported Prisoner.

Capt. M. L. Puri, I.M.S.

THE HONOURS LIST.

The following awards to medical officers are announced :—

D.S.O.

Surg.-Major Francis William Bailey, R.F.A. (Medical Officer).

For conspicuous gallantry and devotion to duty. When the batteries of his brigade came under heavy shell-fire he at once went out into the open to tend the wounded and dying, with utter disregard of danger.

Major Michael Joseph Mahoney, R.A.M.C.

For conspicuous gallantry and devotion to duty in action. When his aid-post was blown in he at once established another under heavy shell-fire and tended the wounded for two days and nights. When relieved he took a few hours' rest and then returned to his gallant work.

Capt. Joseph Ellis Milne, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. He has repeatedly tended the wounded under heavy shell-fire, and has shown himself utterly regardless of personal safety.

Capt. Edgar Percival, R.A.M.C.

For conspicuous gallantry and devotion to duty. He led a party of stretcher-bearers into a wood, and remained for over two hours searching for wounded under shell and machine-gun fire. On previous occasions he has done similar gallant work.

Military Cross.

Temp. Capt. Harold Ackroyd, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. He attended the wounded under heavy fire, and finally, when he had seen that all our wounded from behind the line had been got in, he went out beyond the front line and brought in both our own and enemy wounded, although continually sniped at.

Temp. Lieut. Frederick Alexander Anderson, R.A.M.C.

For conspicuous gallantry and devotion to duty. When his aid-post was hit and all his assistants were wounded, he himself being badly bruised, he helped to dig out three buried men under heavy shell-fire. He stuck to his duty till his battalion was relieved.

Temp. Lieut. Bernard Francis Bailey, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. For two days and nights he tended the wounded under heavy shell-fire. He was stunned by a shell, but, on regaining consciousness half an hour later, continued his fine work with the greatest coolness.

Temp. Capt. Cyril Carlyle Beatty, R.A.M.C.

For conspicuous courage and coolness when in charge of an advanced dressing-station. By his fine work he has ensured quick and successful evacuation of wounded from the aid-posts. In times of difficulty he set an invaluable example.

Temp. Lieut. James Gordon Bell, R.A.M.C.

For conspicuous gallantry and devotion to duty. He tended the wounded under heavy shell-fire. On being relieved he heard that some wounded men had been left in a trench and immediately went back 2½ miles with a stretcher party through heavy shelling and brought in three wounded men.

Temp. Capt. Thomas Bourne-Price, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. He went from place to place under very shell-fire to try and get into communication with the ambulance cars. Finally, he was half-smothered by the explosion of three successive heavy shells. For many months he has done very fine and gallant work when in charge of stretcher-bearers, and when tending and evacuating wounded under shell-fire.

Capt. William Bowater, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. He collected the wounded from the front-line trenches and advanced dressing-stations under heavy shell-fire during several days. He allowed himself hardly any rest, and set a fine example to his men.

Capt. Samuel Brown, R.A.M.C.

For conspicuous devotion to duty during operations. He was blown up by a shell and so much injured that he had to spend the night in a field ambulance; but, though still suffering, he returned to duty next day. A few days later he was again blown up. He has never spared himself, and has displayed the greatest gallantry.

Temp. Capt. William Campbell, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. He repeatedly attended the wounded under heavy shell-fire. On one occasion, when a dug-out had been hit by a gas shell, he went in to attempt the rescue of those within under very dangerous conditions.

Temp. Lieut. John Russell Christian, R.A.M.C.

For conspicuous gallantry and devotion to duty. When Brigade Headquarters was shelled by the enemy, one man being mortally wounded and two officers incapacitated, he remained with them all night exposed to shell-fire. After the wounded had been removed to safety, he remained behind in order that other units might know where to find him. He has done other fine work.

Temp. Capt. Arthur Gruchy Clark, R.A.M.C.

For conspicuous gallantry and good work, controlling bearers at the front under very heavy fire. He did especially good work in advanced trenches.

Temp. Lieut. Vincent Middleton Coates, R.A.M.C.

For conspicuous gallantry and devotion to duty in action. During an attack he tended the wounded under very difficult circumstances, working without assistance after his orderly was hit. He was under heavy shell-fire.

Capt. Aston Ridley Dale, R.A.M.C., Special Reserve.

For conspicuous gallantry and devotion to duty during operations. He was untiring in his efforts on behalf of the wounded, and showed great courage when a shell burst in the entrance to his dressing-station, killing his orderly and wounding a sergeant.

Temp. Capt. Douglas Allan Donald, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. When a dug-out was hit by a gas shell, he twice entered and removed two wounded men under very dangerous conditions. He had previously been working continuously for 48 hours removing the wounded from aid-posts.

Temp. Lieut. Richard Felton, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. He tended the wounded during an intense bombardment, and, a few days later, when a shell blew in the orderly room, killing three men and burying the remainder, he rescued the latter under most dangerous conditions. But for his pluck and devotion to duty many more lives would have been lost.

Temp. Capt. William Eric Giblin, R.A.M.C.

For conspicuous gallantry and devotion to duty in action. He tended the wounded in "No Man's Land" under heavy shell and machine-gun fire, and showed an utter contempt of danger.

Capt. Samuel Sowray Greaves, R.A.M.C.

For conspicuous gallantry and devotion to duty in action. For 36 hours he tended the wounded in the open. On several other occasions he has shown great courage under heavy shell-fire.

Temp. Capt. John Greene, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. He tended the wounded under heavy shell-fire, though himself injured by a shell which burst only 10 yards from him. He immediately returned to duty after being tended at the dressing station.

Capt. Eben Stuart Burt Hamilton, R.A.M.C., Special Reserve.

For conspicuous gallantry and devotion to duty during operations. He rescued three severely wounded men from the ruins of a dug-out under heavy shell-fire. As he was removing the last man the dug-out was blown in on him, and he had himself to be dug out. He has done other fine work and has shown an utter disregard of danger.

Temp. Capt. John Bowman Hunter, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. He tended the wounded under heavy shell-fire when the battalion had suffered heavy casualties. By his fine example he inspired all under him with courage and energy.

Temp. Capt. Ernest Emrys Isaac, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. He tended the wounded in a very exposed position for 12 hours, some of them being wounded and one actually killed by shell-fire in his aid-post. At one time he had worked unceasingly for 35 hours without food, drink, or rest, having divided up his food and water among those of the wounded who most needed it.

Capt. Frank Graham Lescher, R.A.M.C., Special Reserve.

For conspicuous gallantry and initiative in searching for wounded under heavy shell-fire. He repeatedly led his bearers through heavy barrage. He continued his work until he had got all the wounded to safety.

Temp. Capt. Kenneth William Mackenzie, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. His aid-post was continually shelled, but he carried on with great determination. He personally assisted some of the walking cases across the shelled area, and, when water ran out, went himself across the open to get some. He showed an utter disregard of personal safety.

Temp. Lieut. George Boyd McTavish, R.A.M.C.

For conspicuous gallantry and devotion to duty. Throughout very severe fighting he was responsible, by his energy, courage, and contempt for danger, in saving a large number of severely wounded who had been left in the battered front-line trenches or in "No Man's Land."

Temp. Lieut. Gregor Mackenzie Miller, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. By his splendid example and cheerfulness he gave great encouragement to the men under heavy and continuous shell-fire. He volunteered to remain in the front-line trenches, where he saved the lives of many badly wounded men by being on the spot.

Temp. Capt. Francis John Morris, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. He led his stretcher-bearers to collect wounded in full view of the enemy's position, and set a fine example to all near him. He has done other similar gallant work.

Temp. Capt. Bartholomew Joseph Mullin, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. He tended the wounded under heavy shell-fire after himself being knocked down by a shell. He had to work in an open trench without any overhead cover and exposed to enfilade fire.

Capt. Hugh Roger Partridge, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. During several weeks he was in charge of a collecting post and repeatedly under heavy shell-fire. He has shown the greatest coolness, and has worked incessantly evacuating the wounded. He has been hit more than once by débris, and has set a fine example to those around him.

Temp. Capt. Wellington Le Roy Pedlow, R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. He tended the wounded utterly regardless of the enemy's fire, and carried a severely wounded officer from a very exposed part of the captured position to the aid-post, being fired at all the way.

Capt. Rudolph Albert Peters, R.A.M.C., Special Reserve.

For conspicuous gallantry and devotion to duty during operations. He tended the wounded the whole day and night under heavy shell-fire, and at night was instrumental in getting in many wounded who were lying out in front in the open.

Temp. Capt. Nicol McNicoll Rankin, R.A.M.C.

For conspicuous gallantry and devotion to duty in remaining at his post and attending to the wounded after the regimental aid-post had received three direct hits and he himself had been wounded in the face. For four hours he continued at duty, the area around his aid-post being heavily shelled all the time.

Temp. Capt. Charles Roche, R.A.M.C.

For conspicuous courage and skill in the performance of his duties, many times under fire. He organised large stretcher parties and rescued many seriously wounded men from points which were constantly under heavy fire. He has displayed great devotion to duty under distressing circumstances.

Capt. Hugh Kingsley Ward, R.A.M.C., Special Reserve.

For conspicuous gallantry and devotion to duty during operations. He has shown an utter contempt for danger, going to any and every place, however exposed, in which there were wounded men. He has himself been wounded by a shell while carrying out this gallant work.

Capt. Albert Groenewald, Medical Officer (attached South African Horse).

For conspicuous gallantry and devotion to duty during several actions. He tended the wounded under fire with utter disregard to his personal safety

Capt. Stephen Liebson, South African Medical Corps.

For conspicuous gallantry and devotion to duty when tending the wounded during operations. Though himself wounded and with nothing but a small trench to work in, he carried on during several days under heavy shell and sniping fire with the greatest courage.

Bar to Military Cross.

Temp. Capt. William Howard Lister, M.C., R.A.M.C.

For conspicuous gallantry and devotion to duty during operations. For 30 hours he supervised the work of his stretcher-bearers in the open under heavy shell-fire. On another occasion he searched a wood for wounded under very heavy shell-fire.

(The award of the Military Cross was announced in THE LANCET of June 26th, 1915.)

The following awards are in connexion with the operations in Mesopotamia:—

Distinguished Service Order.

Major Ernest Vaughan Aylen, R..AM.C.
Lieut.-Col. Hubert Oliver Browne Browne-Mason, R.A.M.C.
Capt. Reginald Charles Clifford, I.M.S.
Capt. Leo Murphy, R.A.M.C.

Military Cross.

Capt. David Arthur, I.M.S.
Capt. Albert Thomas James McCreery, R.A.M.C.

MENTIONED IN DESPATCHES.

The names of the following medical officers are mentioned in despatches received from Lieut.-General Sir Percy Lake, K.C.B., in connexion with the operations in Mesopotamia and for the relief of Kut-el-Amara:—

Royal Navy.—Staff-Surg. E. Cameron and Surg. F. G. Hitch.

Staff and Headquarters.—Bt. Lieut.-Col. H. Boulton, I.M.S.; Lieut.-Col. G. B. Irvine, I.M.S.; Col. A. E. Tate, A.M.S.; Major A. W. C. Young, I.M.S.; Lieut.-Col. H. O. B. Browne-Mason, R.A.M.C.; Col. P. Hehir, C.B.

Royal Army Medical Corps.—Temp. Capt. R. M. Allan; Major E. V. Aylen; Capt. A. S. Cane; Capt. E. G. S. Cane; Capt. F. H. M. Chapman; Lieut.-Col. (temp. Col.) D. J. Collins; Major H. J. Crossley; Capt. F. T. Dowling; Capt. R. W. Duncan, Special Reserve (killed); Major J. G. Foster; Capt. H. L. Garson, Special Reserve; Capt. A. Glen, Special Reserve; Capt. W. T. Graham; Lieut.-Col. S. F. St. D. Green; Lieut.-Col. J. Hennessy, C.B.; Temp. Capt. A. J. Ireland; Capt. S. W. Kyle; Major F. C. Lambert (deceased); Lieut. W. G. Macdonald; Temp. Capt. A. N. Minns; Capt. T. J. Mitchell; Capt. W. H. O'Riordan; Capt. T. E. Osmond; Lieut.-Col. F. J. Palmer; Bt. Col. J. M. Sloan, D.S.O.; Capt. J. Stanton; Temp. Lieut. J. B. Thackeray; Capt. R. T. Vivian; Capt. H. F. Warwick; Capt. P. A. With.

Indian Medical Service.—Capt. A. R. S. Alexander (died of wounds); Bt. Lieut.-Col. S. Anderson; Capt. D. Arthur; Major E. F. E. Baines; Temp. Lieut. U. N. Banerjee; Major C. H. Barber; Major R. J. Bradley; Temp. Lieut. J. P. Carteenvalla; Capt. R. C. Clifford; Major F. P. Connor; Capt. F. C. Fraser; Capt. D. C. V. Fitzgerald; Major W. Gillitt; Major C. M. Goodbody, D.S.O.; Capt. E. S. Goss; Capt. P. D. Green-Armytage; Capt. W. H. Hamilton; Capt. R. de S. B. Herrick; Capt. J. H. Hislop; Major J. H. Horton, D.S.O.; Capt. J. W. Jones; Major R. Kelsall; Capt. E. W. O'G. Kirwan; Capt. L. A. H. Lack; Major R. A. Lloyd; Capt. R. F. D. Macgregor; Major N. W. Mackworth; Capt. J. S. S. Martin; Lieut.-Col. A. H. Nott; Major W. S. Patton; Lieut.-Col. E. L. Perry; Capt. M. L. Puri; Capt. Rai Dewan Hakumat; Capt. H. K. Rowntree; Major C. C. C. Shaw; Capt. J. A. Sinton, V.C.; Capt. R. Sweet; Temp. Lieut. S. D. Sondhi; Lieut. W. C. Spackman; Capt. R. T. Wells; Bt. Col. W. W. White, C.B.; Capt. Sen Jyoti Lal.

DEATHS AMONG THE SONS OF MEDICAL MEN.

The following sons of medical men must be added to our lists of those who have fallen during the war:—

Second Lieut. T. S. H. Schäfer, 13th Northumberland Fusiliers, younger son of Sir E. Schäfer, F.R.S., of Edinburgh University.
Lieut. C. H. Brew, Irish Guards, younger son of Dr. R. H. Brew, of Chew Magna, Somerset.
Major R. E. E. Kriekenbeek, Indian Army, second son of the late Dr. C. A. Kriekenbeek, of Colombo, Ceylon.
Second Lieut. S. M. Williams, Sherwood Foresters, only son of the late Dr. R. H. Williams, of Pembroke Dock, South Wales.
Second Lieut. A. L. Menzies, Royal Field Artillery, youngest son of the late Surgeon-General Menzies.
Second Lieut. W. G. Boyd, Inniskilling Fusiliers, only son of Dr. J. C. Boyd, of Lifford, Co. Donegal.
Second Lieut. H. N. Heyward, Durham Light Infantry, third son of Dr. H. Heyward, of South Croydon.
Lieut. F. H. King, West India Regiment, attached West Riding Regiment, elder son of Colonel W. G. King, C.I.E., I.M.S. (retired), of Hatch End, Pinner, Middlesex.
L. A. Seccombe, youngest son of Dr. S. H. Seccombe, of Melbourne, Australia.
Lance-Corpl. W. M. Chapman, London Regiment, second son of Dr. C. W. Chapman, of Harley-street, London.
C. S. Nicholson, New Zealand Machine Gun Co., younger son of Lieut.-Col. J. E. Nicholson, R.A.M.C., of Winchester.
Lieut. J. H. Cameron, Black Watch, son of Dr. A. Cameron, of Dollar, Clackmannanshire.
Lance-Corpl. C. G. Webb, Royal West Kent Regiment, elder son of Dr. C. Webb, of Margate.
Capt. E. P. Wallis, attached Royal Sussex Regiment, son of Dr. P. E. Wallis, of East Grinstead.

OBITUARY OF THE WAR.

GERARD PRIDEAUX SELBY, B.A., M.B., CH.B.OXON.,
CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain G. P. Selby, who was killed on active service on Sept. 26th at the age of 25, was the eldest son of Dr. Prideaux Selby, of Teynham. Educated at Winchester and New College, Oxford, he completed his medical studies at St. Bartholomew's Hospital, taking his M.B., Ch.B. Oxon. in 1914. At Oxford he was moving spirit in the Officers Training Corps, and later in London he joined the Inns of Court Officers Training Corps, in which he held the rank of sergeant when he passed into the Royal Army Medical Corps in July, 1914, just before war broke out. After six months' service he was promoted to captain, and he used to say that he had been private, corporal, sergeant, lieutenant, and captain all within a little more than a year. He was first employed in training Royal Army Medical Corps men at Aldershot, and then went out as regimental medical officer to the Argyll and Sutherland Highlanders. He was wounded in the thigh in March, 1915, and after a period as member of a medical board for examining recruits he went out again attached to a field ambulance and later to a battalion of Lancashire Fusiliers. With them he met his death while attending to the wounded in the firing line.

Captain Selby, whilst keen on his medical work and possessing powers of concentration which enabled him to pass his examinations in the minimum time, was also an athlete. At Oxford he rowed as a freshman in the New College Torpids Eight, and he was a useful hockey player at back. His keenness impressed all those with whom he was brought in contact, and the organisation of his aid-post for the advance during which he lost his life was the subject of approving comment by his commanding officer.

JOHN DEIGHTON, B.A., M.B., B.C. CANTAB.,
CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain J. Deighton, who died of wounds contracted on active service on Sept. 19th, 1916, aged 29, was the third son of Lieutenant-Colonel Deighton, R.A.M.C. (T.), of St. Bernard's, Cambridge. He was educated at St. Faith's Preparatory School, Cambridge; King's School, Canterbury, where he was a scholar; and Trinity College, Cambridge, entering the London Hospital in January, 1912. He took the Conjoint Board qualification in October, 1913, afterwards holding various appointments at the hospital, and qualifying M.B., B.C. Cantab. the following year. In November, 1914, he obtained a commission in the R.A.M.C., and joined the special reserve of officers. In March of the following year he went to France with the 18th General Hospital, and in June was attached as medical officer to the King's Own Royal Lancaster Regiment, with which he met his death.

Captain Deighton was good both at work and play. At Cambridge he rowed, while he played forward for his College Rugby fifteen, and was a member of the London Hospital team which won the hospitals' cup at Richmond in March, 1914. His personal qualities made him popular among the officers and men of his battalion.

MAURICE PATERSON INGLIS, M.B., CH.B. EDIN.,
CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain M. P. Inglis, who was killed in action on Sept. 17th in his twenty-fifth year, was the second son of the Rev. William Balfour Inglis, B.D., of Valparaiso, and a grandson of Maurice Paterson, LL.D., formerly rector of Moray House Training College, Edinburgh. He was educated at George Watson's College, Edinburgh, entering Edinburgh University, where in 1914 he graduated as M.B., Ch.B. At the outbreak of the war he held a lieutenant's commission in the Royal Army Medical Corps (Special Reserve), and in February, 1915, he went to the front, and towards the close of that year became a captain, having been mentioned in despatches. He met his death while attending to the wounded after a great advance.

Captain Inglis took a keen interest in athletics. At the Scottish Inter-University sports he represented Edinburgh University on several occasions, and was a good high jumper, being runner up in the Scottish high jump championship immediately before the outbreak of the war. He had considerable facility with the pencil, and his cartoons in the *Student* were enjoyed by his teachers and fellow students, with both of whom his frank and genial disposition made him a general favourite. A letter from the colonel of his regiment speaks of the affection which these qualities produced for him among men and officers at the front. "He was keen and efficient, and always the first to go to the aid of wounded without thought for himself."

THE GARDELEGEN CAMP.

The report on the typhus epidemic at the Gardelegen camp, which has just been issued by the Government Committee on the treatment of British prisoners of war (Wyman and Sons. Cd. 8351. Price 1½*d.*), based on information provided by three officers of the Royal Army Medical Corps who were there—Major P. C. T. Davy, Captain A. J. Brown, and Captain A. Scott Williams—affords a close parallel to the conditions existing at the same time at Wittenberg. The camp was opened in November, 1914, on an area 350 by 550 yards, and was designed to hold 14,000 prisoners, of whom each company of 300 occupied a hut with about 6 cubic metres space per man. Each hut contained in its breadth four rows of straw palliasses arranged so that laterally they were touching and at the ends only the narrowest passage-way was left between. In February, 1915, the camp contained about 4000 Russians, 6000 French, 700 Belgians, and 230 British, the latter, although relatively few in number, being, by official instructions, mixed in proportionate numbers in each barrack-room. The diet consisted of soup, black bread, and a weekly raw herring, and, until supplemented with supplies sent from home, was so insufficient that the Russian prisoners struggled in the refuse-pit for potato-parings. The men were inadequately clothed: most of the British prisoners had no overcoats, nearly one-half had no boots. The sufferings engendered by insufficient food and clothing were aggravated by the extreme cold of the winter 1914–15, as although two fire-places were provided in each hut, the fuel was quite insufficient. A latrine and urinal were provided for each company under one roof, and the task of emptying the latrines into the tank cars was allotted to the British prisoners until their numbers were too much reduced by sickness to provide a fatigue party of sufficient strength. The water-supply was sufficient, but prior to the outbreak of typhus there were practically no facilities for personal cleanliness; a trough in each compound served for washing person, clothing, and utensils, all entirely without soap. Lice, therefore, swarmed in every garment worn and in all the bedding. The result of these privations was to reduce all the prisoners to a condition of apathetic misery in which their chief occupation was the killing of parasites. At the beginning of February two British medical officers, four French, and four Russians were brought into the camp,

apparently in anticipation of an epidemic, and a few days afterwards, the sickness-rate having mounted to 50 a day, the German medical officer, with his assistant and staff of nursing orderlies, evacuated the camp along with all the German guards, who then formed a cordon around it. The sick were thus left entirely unattended until the imprisoned medical officers devised a complete invalid service. Among the 11,000 prisoners, 2000 cases of typhus occurred, which was fortunately of a milder type than at the other German camps. An epidemic of scarlet fever occurred at the same time. 12 of the 16 doctors in the camp contracted typhus and 2 died. Of the 22 British soldiers who volunteered as orderlies 20 caught typhus and 2 died. No milk was supplied by the German authorities, but the medical officers succeeded in obtaining a supply from the town, which they paid for themselves. Drugs and dressings were scanty, and neither bed-pans nor urinals were available for the sick. With the advent, however, of an elderly German medical officer in civilian dress, towards the end of March, matters began to improve, and finally a large bath-house with disinfector was installed, but only when the epidemic was spent. The report bears suitable testimony to the splendid work of the British medical officers under circumstances of appalling difficulty. Two have now returned to this country, but Captain Scott Williams still remains, although not at Gardelegen, which no longer contains any British prisoners. The facts of German camp administration speak for themselves; the Committee records its belief that these methods are typical of German prison administration.

CHRONIC DISEASE AND MILITARY FITNESS.

A recent Army Council Instruction in regard to surgical operations for certain conditions seems to have given rise to some misunderstanding. The instruction is confined to those diseases which existed before the war, and which do not render a man unfit for military service. It has been brought to the notice of the authorities that a large number of surgical operations are being performed for chronic conditions which existed previous to joining the Army, and which do not render a man unfit for military service, whereas the operations have frequently been found to render the officer or man unfit for long periods. It is rightly suggested that such operations should not be performed unless there is very good reason to believe that the disability is one which unfits the patient for military service, and that the result of the operation will be speedy restoration to military fitness. The operations referred to include those for certain forms of varicocele, hernia, and chronic nasal conditions, chronic pyorrhœa, chronic enlargement of the tonsils, flat-foot, deformities of the toes, and chronic abdominal conditions. These instructions will prevent the occupation of beds more urgently required for the sick and wounded returning from the front.

AUXILIARY R.A.M.C. FUNDS.

The following list of donations, totalling just over £731, has been received for the Officers' Benevolent Branch up to Oct. 6th:—

"From a Friend" (per Sir Wm. Osler) £100; Lieut.-Col. W. Collier, Major W. F. Brook, and Lieut.-Col. W. Hale White, each £52 10*s.*; Lieut.-Col. H. C. Barling, £50; Lieut.-Col. F. W. Westmacott and Major Ewen Maclean, each £21; Major A. C. Farquharson, £20; Capt. A. A. Young, £15; Capt. Hugh F. Wickens, Lieut.-Col. Sir James Barr, Lieut.-Col. Geo. S. Middleton, Capt. Cholmondeley Webb, Major T. K. Monro, Major T. W. Buckley, Capt. Hugh H. Weir, and Lieut.-Col. T. Gowans, each £10 10*s.*; Surg.-Gen. Sir G. H. Makins, K.C.M.G., C.B., Capt. D. Douglas Crawford, and per Sir William Osler, each £10; Col. Sir J. Rose Bradford, K.C.M.G., C.B., Col. W. Coates, Lieut.-Col. G. A. Bannatyne, Lieut.-Col. Norman Dalton, Capt. Edgar Grey, Capt. V. Rich, Capt. E. P. Buzzard, Capt. H. R. Vachell, Lieut.-Col. Claude Douglas, Capt. R. P. Rowlands, Lieut.-Col. W. F. Haslam, Capt. W. B. Warrington, Capt. A. Blackwell, Lieut.-Col. B. L. Hamilton, Surg.-Col. Atwood Thorne, V.D., Major H. H. Littlejohn, Lieut.-Col. W. Pasteur, Major D. W. Patterson, Major J. W. Leech, Lieut.-Col. W. G. Richardson, Capt. F. W. Wilson, Lieut.-Col. A. M. Martin, Lieut.-Col. H. B. Angus, Dr. A. Duke, Major J. D. Wardale, Major A. Parkin, Major R. P. R. Tyle, and Lieut.-Col. T. Beattie, each £5 5*s.*; Col. D. J. Mackintosh, M.V.O., Capt. H. H. Kendrick, Capt. H. Gordon Oliver, Capt. H. H. Elliot, Lieut.-Col. H. P. Hawkins, and Lieut.-Col. W. F. Roe, D.S.O., each £5; Capt. Ed. Mackay and Lieut.-Col. Mansell Moullin, each £4 4*s.*; Capt. T. V. Mills, Capt. Leslie H. Walsh, Lieut. A. P. Gibbons, Lieut.-Col. R. A. Bolam, Capt. T. H. Livingstone, Major F. C. Pybus, Major W. D. Arnison, Capt. H. J. Slade, and Capt. W. T. Harkness, each £3 3*s.*; Capt. V. H. Blake, Major G. Newton Pitt, Capt. C. E. Droop, Capt. Robert Thompson, Capt. W. Seymour, and Capt. C. F. Armstrong, each £2 2*s.*; Capt. W. B. Courlay, £2; Major T. S. Toogood, Major W. W. Jones, Capt. Slater, Capt. Menzies, Capt. Lickley, Lieut. P. E. Murray, Lieut. H. O. Wheeler, Lieut. W. B. Anderson, and Lieut. and Qmr. Gibbs, each £1 1*s.*

ITALY'S "MUTILATI" AND "STORPI."

Our Italy correspondent writes as follows:—Turin, the seat of the great sub-Alpine medical school, has for well-nigh a year been solving the difficult problem of converting the cripples of the war into bread-winning citizens, first by surgical and orthopædic methods, and next by "re-education" in this or that handicraft, for which special laboratories have been instituted where handicraft or *métier* may be acquired. The Order of Rosmini, for instance, now accommodates more than 100 "mutilati," who are learning to be shoemakers, tailors, bookbinders, accountants, typewriters, telegraph clerks, &c., and its example will soon be followed by other institutions with laboratories specially equipped for the acquisition of other *métiers*. The undertaking is an uphill one in Italy, where the greater number of cripples are peasants with little more than an elementary schooling; but the progress made is reassuring. Much more difficult, however, is the re-education of the "storpi" or functionally impaired. Conservative surgery reduces the number of the "mutilati"; but the "storpi" are much less easily dealt with, besides being more numerous, their numbers being 7000 as against 4000 cripples. There are men who have sustained traumatic lesions of peripheral nerves whose function is thereby, directly or indirectly, paralysed.

A subject may have to be treated with an arm pendulous, so as to be practically an extraneous body; we meet another whose arm is "materially" normal, but in such a state that it can neither be raised nor applied to any use, the man is in fact a "mutilato." Others come before you with a hand normally articulated but with the fingers sensorially dead, or immovable; others again have the joints ankylosed or so stiff that the limb has lost its function. The list of similar cases might be extended indefinitely, including lesions, which, compatible with existence, or even with partial use, or confined to a limited part of the body, leave the subject with a sense of supine resignation to partial deformity, rather than submit to a surgical operation, not severe in itself, but capable of curing him. This happens often enough in the case of the imperfectly educated subject, while equally often he has not the means or the opportunity of resuscitating the suspended function. Many of these "storpi" have been sent to provincial hospitals, where the apparatus for physiotherapeutic treatment is non-existent. How many return home for fear that the re-suscitating of the function of the limb may deprive them of the compensation allowed them by the State we wonder.

In France, and lately in England, a great impulse has been given to neurological studies dealing with the case of the "storpi," and admirable indeed is the perfection they have reached in diagnosing and in localising lesions of individual nerves. (I learn this from the columns of French and English papers, both medical and lay.) In Italy such progress is but partially in evidence; though something has already been achieved. There is, for example, the Villa Bondi at Florence, superintended by the nerve specialist, Professor Ettore Levi, where, from the outbreak of the war, the scientific treatment of the "storpi" has been creditably carried out. At Milan, in the neurological department of the "Ospedale," Professor Meda has done good work in this direction; and quite lately from Pavia Professors Sala and Verga have issued a monograph, based on their experiences in the Hospital of the Collegio Borromeo (directed by Camillo Golgi, of antimalarial fame), experiences of signal success in treating the lesions inflicted by firearms on the peripheral nerves. At Turin the military authorities and the civil authorities have already recognised and attempted to carry out the indicated treatment. At the Ospedale Mauriziano, at the Central Military Hospital, and at the San Giovanni Hospital, such treatment has, in part, been initiated. But there is still a want, even in Turin, of a regular neurological department in which a specialist can give his undivided attention to the whole subject, following out the approved methods, collecting all the clinical records illustrative of such cases, and the scientifico-practical conclusions obtained at other institutions, foreign as well as Italian. For the filling up of such a want the Turinese school is making laudable efforts, inspired mainly by that veteran clinician and philanthropist Professor Pio Foà, to whose recent manifesto on the subject the reader is referred for data, for the statistics and arguments with which he reinforces his

propaganda are illuminating. True to traditions as the cradle of Italian unity and independence, the sub-Alpine capital cannot but respond to the appeal of its illustrious citizen and so furnish to its provincial, especially its southern, sisters an exemplar to be followed, if not improved upon, in relief of their country's sufferers.

THE SUPPLY OF MEDICINAL GLYCERINE.

As from April 1st, glycerine manufacturers were asked to obtain from buyers a guarantee that all medicinal glycerine delivered would be used only for making up British Pharmacopœia or B.P. Codex preparations, or where it was prescribed in individual cases, either alone or in combination with other drugs, by a duly qualified medical practitioner. These restrictions were not applied to stocks of glycerine held by wholesalers or retailers prior to April 1st, but in view of the increased necessity for conserving the supply for the needs of the war, and of the possibility that it may be necessary to reduce still further the quantity to be allowed for medicinal purposes, holders of such stocks are now asked to apply the restrictions to them. Such action will directly serve national interests in tending to secure a sufficient supply of glycerine for the general public in those cases where its value for medicinal purposes is of importance.

THE PROBLEM OF THE WAR CRIPPLE.—Sir Alfred Keogh presided last week at a meeting of the Association of Technical Institutions called to consider the problem of training disabled men from the services for useful occupations. He stated that he had long been of the opinion that no movement for this training would be successful unless it had the coöperation of the heads of the technical institutions, and these institutions must be intimately associated with the hospitals. It was true that the Army Council were making arrangements to establish workshops for curative treatment in connexion with the orthopædic hospitals and depôts up and down the country, and the opportunity could then be taken of starting the training of men in certain industries. But, he said, the primary object of the hospitals was to get men back to the ranks, and the training of the men unfit for further service must be carried out after their discharge through some such agency as the Association of Technical Institutions. The resources of the Army would be placed at the disposal of the discharged soldier for this purpose.

THE MANOR WAR HOSPITAL.—Mr. A. F. Buxton, chairman of the London County Council, writing from the County Hall, asks for extra comforts, such as books, fruit, stationery, tobacco, and sweets, for the 1200 sick and wounded soldiers who will receive accommodation in the London County Council Manor Asylum, which has been taken over by the War Office. In addition to the gifts in kind which have already been received, personal help and £2000 are required in connexion with a canteen and lodgings for visiting friends. Mrs. A. F. Buxton is the almoner and Miss Constance Toynbee the secretary. The bankers are the Union of London and Smith's Bank. Gifts in kind will be warmly welcomed at the hospital, near Epsom station.

THE AMERICAN WOMEN'S WAR HOSPITAL AT PAIGNTON.—We have received the third report[1] of this hospital dealing with the third thousand cases treated there. The total number of wounded men treated was 369, of whom 205 had pyogenic infections, 7 an infection with the gas bacillus, 1 with tetanus, 3 with erysipelas. Only 6 amputations were performed, 1 of the thigh, 5 of fingers. Under infectious medical conditions were treated 45 cases of bronchitis, 32 of rheumatism, 16 each of pneumonia and endocarditis, 15 of influenza. Of non-infectious conditions, debility was credited with 56, nephritis with 36, emotional shock with 19, and gas poisoning with 14. Death occurred in 4 cases, 3 surgical and 1 pneumonia. The average stay was 33 4 days. Fifty-eight men were invalided out of the service, 104 were transferred elsewhere for special treatment, 415 to convalescent homes, and 419 to furlough, 10 days being granted for all except enteric cases who are given six weeks. A new massage and electrical department was opened on May 18th, and has given treatments as follows: Massage, 813; electrical, 383; ionisation, 273; and radiant heat, 114. The staff now includes besides the chief surgeon, Dr. Pearce Penhallow, Dr. H. M. Frost, principal assistant surgeon, Dr. A. J. Casselman, pathologist, and three assistant surgeons.

[1] The first report was noticed in THE LANCET of Oct. 23rd, 1915, p. 949, and the second on Feb. 12th, 1916, p. 380.

ROYAL PORTSMOUTH HOSPITAL.—In response to an application from the Assistant Director of Medical Services, Portsmouth, for 60 additional beds for the wounded, the committee of the Royal Portsmouth Hospital, anxious to assist the military in every way consistent with the interests of the civil population, have decided to offer the present out-patients' department and another ward for that purpose. If the proposal is accepted it will necessitate some alterations; the expenses will, it is presumed, be borne by the War Office.

AN AUXILIARY V.A.D. HOSPITAL AT NORWOOD.—Lady Londonderry has opened the Lambeth Auxiliary V.A.D. Hospital at "Homedale," The Avenue, Upper Norwood. The building, which has been lent by Colonel and Mrs. Sleeman, contains 40 beds.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates were successful:—

Surgery.—H. St. H. Vertue (Sections I. and II.), Oxford and Guy's Hospital.

Medicine.—W. Burridge (Section II.), Oxford and Guy's Hospital; R. F. Jarrett (Section II.), London Hospital; C. A. Mortlock-Brown (Section II.), Royal Free Hospital; R. H. Pettersson (Section I.), St. George's Hospital; M. M. Shaffi (Sections I. and II.), London Hospital; I. H. Syed (Sections I. and II.), Bombay and Manchester; S. L. Szpigner (Section II.), London Hospital; S. C. Varley (Sections I. and II.), Oxford and St. George's Hospital; and A. G. E. Wilcock (Sections I. and II.), Cambridge and St. George's Hospital.

Forensic Medicine.—S. C. Ho, Cambridge and London Hospital; and W. Stansfield and B. Walley, Manchester.

Midwifery.—D. D. Hearn, Durham.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—W. Burridge, R. F. Jarrett, S. C. Varley, and H. St. H. Vertue.

EXAMINING BOARD OF THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—The following are the results of the Triple Qualification Examinations:—

FIRST EXAMINATION.

Pauline Figlor, Andrew Gold, Arthur William Hodder Noble, John Murray, and Thomas Hall James Douglas.

Physics.—Sayed Ghaleb, Demetrius Maurice O'Flaherty, and John Leo King.

Biology.—Demetrius Maurice O'Flaherty and Eric Edward Macpherson Steen.

SECOND EXAMINATION.

Joseph Black, Jane Copas, H. A. Madman, Jacob Johannes Van Niekerk, Andre Antoine Lamaletie, Jung Bahadur Singh, and Joseph Campbell.

Anatomy.—Alexander Forsyth Caddell, James Charles Meek, and Andrew Wood Smith.

Physiology.—Thomas Richard O'Keefe, Thomas Francis Kelly, and Thomas Hall James Douglas.

THIRD EXAMINATION.

Eliza Jean Stuart, John Bourke, Albert Ernest Hempleman, Thomas Lloyd Edwards, Hugh McIlroy, Arukatti Patabendige Frederick Abeysuriya, Harold Gengoult Smith, Robert Pollock, and Albert Sandelson.

Pathology.—Andrew Francis Brigimen and Albert Herbert Brooke Hudson.

Materia Medica.—Hugh William Howatson, Arthur Stanley Hughes, Richard Gordon Bell, and Reginald Leslie Wright.

FINAL EXAMINATION (L.R.C.P. & S. EDIN., L.R.F.P. & S. GLASG.).

Reginald John Thomas Malcolm-Gasper, Spearman Charles Swinburne, William John Mitchell White, Edgar Annequin, Stanley Wall Hoyland, Martha Hunter Hoshing, Charles George Booker, Herbert Ainslie Grant Dykes, Janie Isabel McBirnie, Edward Mervyn Lewis Morgan, Paul Lucien Manuel, Harry Morley, Reginald Vincent Clarke, Robert McGregor, Owen Glendower Evans, Edwin Butler, and Robert Woodside.

Medicine.—Yeshwant Narayan Kadam, Edward Glyn Jones, William Fidler Mason, and John Joseph Mulvey.

Midwifery.—Yeshwant Narayan Kadam, William Fidler Mason, Russell Nelham Burton, and Wendell Thomas Garretson.

Medical Jurisprudence.—Cecil Vale Samwell, Indranarayan Borrah, William Ulic Desmond Longford, George Nicol Groves, Thomas Robert Wilson, Henry Shaw, Don Adrian Jayasinghe, Robert McLaren, Patrick Aloysius O'Brien, and Wendell Thomas Garretson.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At a meeting of the College held on Oct. 19th, the following gentlemen having passed the requisite examinations between July 3rd and 5th, were admitted Fellows:—

Matthew Leslie Guy Hallwright, M.R.C.S., L.R.C.P. Lond, M.D. Durh., Captain, New Zealand Medical Corps; Maurice Horan,

M.B., B.Ch. Dub., Great Northern Central Hospital, London; William Cuthbert McGaw, M.B., Ch.B. New Zealand, Captain, New Zealand Medical Corps; James McHoul, M.B., B.S. Glasg., Captain, R.A.M.C. (T.); John Daniel Milne, M.B. Toronto, M.R.C.S., L.R.C.P. Lond., Lambeth, Ontario, Canada; Hamish Nicol, M.R.C.S., L.R.C.P. Lond., London; Arthur Charles Oldham, L.R.C.S. Edin., Major, R.A.M.C. (T.), Kidderminster; and George Lionel Preston, M.R.C.S., L.R.C.P. Lond., Saltash, Cornwall.

ROYAL SOCIETY OF MEDICINE.—Before the Section of Surgery on Oct. 31st, at 5 P.M., Dr. Sherman, of Pittsburg, U.S.A., will deliver a lecture on the "Sterilisation of Wounds by the Method of Carrel," with epidiascope demonstration.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL (UNIVERSITY OF LONDON).—The University Scholarship in Anatomy and Physiology has been equally divided and awarded to L. M. Moody and H. T. Rymer.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON).—Entrance Scholarships in Science have been awarded as follows: "Price" Science Scholarship (value £100), R. A. Madgwick; Entrance Scholarship in Science (value £50), D. Hunter.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—Dr. Hector Mackenzie will deliver the Bradshaw lecture on Exophthalmic Goitre on Nov. 2nd; Dr. H. R. Dean the Horace Dobell lecture on the Mechanism of the Serum Reactions on Nov. 7th; and Dr. W. H. R. Rivers the Fitz Patrick lectures on Medicine, Magic, and Religion (Part II.) on Nov. 14th and 16th. The lectures are open to all members of the medical profession, and begin in each case at 5 P.M.

THE LATE DR. OLIVE CLAYDON.—In the brief notice of the career of Dr. Olive Claydon which appeared a fortnight ago it should have been mentioned that it was principally due to her initiative that the Friendly Societies decided to modify their regulations so as to allow patients incapacitated for work by venereal disease to receive sickness benefit.

WAR GRANT TO PANEL CHEMISTS.—An additional war allowance of 0·3*d.* per prescription has been granted to panel chemists by the National Health Insurance Joint Committee for the year 1917, as well as retrospectively for the whole of the year 1916, conditional upon a satisfactory pharmaceutical service being secured for the coming year.

Mr. Frank Kidd, assistant surgeon to the London Hospital, will deliver a course of lectures on "Diseases of the Male Urethra" in the clinical theatre of the hospital on Mondays, Nov. 13th, 20th, 27th, and Dec. 4th, at 4 P.M.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Sale of Cocaine.

A LARGE number of Members of the House of Commons have placed on the notice paper the following motion: "That in the opinion of this House the special permit granted by the Secretary of State for the Home Department to unregistered practitioners in dentistry to purchase and use solutions containing not more than 1 per cent. of cocaine for the purposes of local anæsthetics up to Oct. 31st, 1916, should be extended for a further period of six months."

Medical Men Serving as Combatant Officers.

Mr. FORSTER, Financial Secretary to the War Office, has now stated in the House that any hardship arising in the case of a medical man serving as a combatant officer will receive his consideration.

HOUSE OF COMMONS.

WEDNESDAY, OCT. 18TH.

Alcohol in Military Hospitals.

Major CHAPPLE asked the Financial Secretary to the War Office whether, in view of the fact that Guy's Hospital had reduced the cost of alcohol administered to patients from £1576 per annum to £151, Leeds Infirmary from 6*s.* 6*d.* per head per annum to 2*d.*, and Wandsworth Infirmary from 5*s.* 3*d.* per head per annum to one-half of ½*d.*, he would cause inquiry to be made as to whether the mortality or length of time in hospital had in these institutions increased in consequence, in order that the War Office might be in a position to advise military hospitals, in the interest of economy, rapid convalescence, and the ultimate sobriety of our men.—Mr. FORSTER wrote in reply: Economies in the issue of stimulants and of all other hospital supplies have been receiving the careful attention of a special committee under the presidency of Major Godfrey Collins, M.P., and the amount of alcohol is limited to what is medically necessary.

Price of Milk.

Answering Mr. SUTTON, Mr. PRETYMAN (Parliamentary Secretary to the Board of Trade) said: I am in agreement with the views expressed by speakers who represent agricultural interests, that the increases in the expenses of dairy farming have not been so great as to justify a contract price for milk higher than 1*s.* 4*d.* per imperial gallon at the London stations and corresponding prices in other large towns. Outside the large towns prices should be on a lower level than this. The possibility of taking steps to secure a limitation of price to this figure without reducing the supply of milk is engaging the careful attention of the Board of Trade and the Board of Agriculture. It is hoped that dealers will succeed in resisting demands for higher prices in any purchases that remain to be made. In any case it is proposed to take immediate steps by legislation, if necessary, to carry out the recommendation of the Departmental Committee on Prices to obtain information as to milk contracts and the prices paid.

Medical Treatment of Discharged Soldiers.

Mr. NUGENT asked the representative of the National Insurance Commissioners what arrangements, if any, were made for the treatment of discharged sailors and soldiers who were insured persons in the United Kingdom; and, in view of the fact that medical benefit did not apply to Ireland, would he make arrangements with either the Irish Insurance Commission or Approved Societies and empower them to make the necessary arrangements for discharged and disabled sailors and soldiers to receive the necessary medical treatment.—Mr. C. ROBERTS wrote in reply: In Great Britain these men receive medical benefit under the ordinary arrangements. As regards Ireland, the matter is one which concerns primarily the Statutory Committee on Pensions, who are carefully considering the matter.

THURSDAY, OCT. 19TH.

Invalid Civilian Prisoners in Britain and Germany.

Answering Mr. MALCOLM, Mr. FORSTER said: As the transfer of German invalid civilians interned in this country to Switzerland would be a matter of considerable difficulty, a scheme is now under consideration for the mutual repatriation of such invalids from this country and Germany on somewhat the same lines as to the method of selection and schedule of invalidity as now obtain for the transfer of combatant prisoners of war to Switzerland.

Medical Treatment of Disabled Sailors and Soldiers.

Mr. HOGGE asked the Parliamentary Secretary to the Local Government Board whether he could give the House the text of the agreement drawn up between the Statutory War Pensions Committee and the Insurance Commissioners for a scheme of medical treatment, including specialist advice, for all disabled sailors and soldiers.—Mr. HAYES FISHER replied: As the scope of the agreement and its terms are not yet finally settled, I fear it is not possible for me to comply with the suggestion in the question.

T.N.T. Poisoning.

Answering Lord HENRY CAVENDISH-BENTINCK in regard to two deaths of female munition workers from T.N.T. poisoning, Mr. BRACE (Under Secretary for the Home Department) wrote: The Home Office has received reports with regard to these two cases. In the case of one of the women, who was not an employee of the firm but an examiner sent to the works on behalf of the Government, the usual precautions had, through a misunderstanding as to her position, not been carried out. In the other case also the doctor appointed for the factory, although a full-time officer, had not been able, owing to the amount of work to be done, to carry out the full periodical examination of the workers. Both defects have now been remedied. The question of T.N.T. poisoning is receiving the close attention of the Home Office and the Ministry of Munitions, and special measures have been taken for dealing with it. Further modifications of the regulations are under consideration. The problem is a new one, and is made more difficult by the fact that the manufacturing processes are constantly being modified. The precautions which are now required or under consideration include all the measures which the experience so far obtained suggests, and further investigations and experiments with new methods and appliances are being made.

TUESDAY, OCT. 24TH.

The Sale of Cocaine.

Mr. RAFFAN asked the Under Secretary for the Home Department how many prosecutions had taken place for violation of the Order in Council prohibiting the sale of cocaine for improper purposes; and in how many cases, if any, the source of supply had been traced to dental practitioners, either registered or unregistered.—Mr. BRACE replied: There have been 25 prosecutions in the metropolitan police district for the violation of this Order in Council. In none was the source of supply traced to a dental practitioner. I have no information as to the number of prosecutions outside the metropolitan police district.

Experiments on Living Animals.

Sir GEORGE GREENWOOD asked the representative of the National Insurance Commissioners whether the experiments upon living animals with chlorine gas performed by Dr. Flack in the laboratory of the Medical Research Committee between July 2nd and 22nd, 1915, were paid for by moneys provided by Parliament out of the general taxation of the country under the National Insurance Act; whether his attention had been called to the nature of these experiments; whether such experiments were correctly described in the annual returns as experiments in the nature of simple inoculations, hypodermic injections, and similar proceedings, and as experiments not involving a serious operation; whether they were performed under a scheme of medical research prepared by the Medical Research Committee under the National Insurance Act; and whether he would lay a copy of any such scheme upon the table of the House.—Mr. CHARLES ROBERTS (in a written answer) replied: The answers to the first, second, and third paragraphs of the question are in the affirmative. In reply to the fourth paragraph, I may say that schemes approved by the chairman of the Joint Committee under Section 7 (1) of the Regulations would not include details of the particular manner in which, or the particular experiments by help of which, a given scheme of research is to be carried out. In the present case the work was sanctioned as a piece of research which was necessary for the solution of certain medical questions of immediate national urgency in the war conditions of July, 1915, but which was also likely to produce knowledge of the greatest value in medical work for the civil population. In reply to the fifth paragraph, I would refer the honourable Member to paragraph (*f*) on p. 20 of the report of the Committee for 1914–15 presented to Parliament last year.

T.N.T. Poisoning;

Mr. ROWLANDS asked the Under Secretary for the Home Department whether his attention had been called to two inquests on women who died of T.N.T. poison; could he say how many deaths from the same cause had occurred during the past three months, and what action was being taken to prevent these disasters.—Mr. BRACE replied: The Home Secretary's attention has been called to both these cases. During the quarter ending Sept. 30th the number of reported deaths from the same cause was 21. The Home Office and the Ministry of Munitions are taking every possible step to investigate and deal with this new source of danger.

WEDNESDAY, OCT. 25TH.

The Sale of Cocaine.

Mr. RAFFAN asked the Home Secretary whether it was in contemplation to extend the general permit enabling unregistered practitioners in dentistry to obtain solutions containing not more than 1 per cent. of cocaine for purposes of anæsthetics beyond Oct. 31st; and, if so, to what date.—Mr. H. SAMUEL replied: I have promised to appoint a small committee to make further inquiries, pending which the temporary permits issued to unregistered dental practitioners will be extended.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ADAMS, ALFRED, M.B., B.Ch. Oxon., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for Looe (Cornwall).

COLCLOUGH, W. F., M.D. Cantab., Certifying Surgeon under the Factory and Workshop Acts for the Sidmouth District of the county of Devon.

GLEN-BOTT, M., M.R.C.S., L.R.C.P., and PARKINSON, K. H., M.R.C.S., L.R.C.P., House Surgeons to the Royal Free Hospital.

KRUK, Madame, M.D., Assistant Anæsthetist to the Royal Free Hospital.

MACKAY, HELEN M., M.B., B.S. Lond., and MATLAND, A. M., M.R.C.S., L.R.C.P., House Physicians to the Royal Free Hospital.

PRING, C. H., L.S.A., to serve as a Medical Practitioner upon the Insurance Committee for the County of London.

SMITH, MIALL, M.R.C.S., L.R.C.P., Senior Obstetric Physician to the Royal Free Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

BARNSLEY, BECKETT HOSPITAL AND DISPENSARY.—House Surgeon Salary £250 per annum, with board, &c.

BIRMINGHAM CITY EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary £300 per annum.

BRISTOL ROYAL INFIRMARY.—House Physician. Salary at rate of £120 per annum, with board, &c.

BURY INFIRMARY.—Senior House Surgeon. Salary £250 per annum, with board, &c.

CAMBRIDGESHIRE ASYLUM, Fulbourn, near Cambridge.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, &c.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £150 per annum, with board, &c. Also Assistant House Surgeon, for six months. Salary £120 per annum, with board, &c.

HACKNEY METROPOLITAN BOROUGH.—Two Temporary Medical Officers for one attendance of two hours per week, in connexion with Council's Infant Welfare Centres. Salary at rate of 10s. per hour.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

ISLEWORTH UNION INFIRMARY.—Temporary Assistant to Medical Superintendent. Salary £375 per annum, with rations, &c.

LEICESTER ROYAL INFIRMARY.—Pathologist to Infirmary and Venereal Diseases Section. Salary at rate of £500 per annum. Also Medical Officers in Charge of Clinics and Beds. Salary £200 for Male Officer and £150 for Female Officer. Also Vacancy on Resident Surgical Staff. Salary £250 per annum.

LONDON LOCK HOSPITAL (MALE), Dean-street, Soho, W.—House Surgeon for six months. Salary at rate of £150 per annum.

LYONS' RED CROSS HOSPITAL.—Assistant Surgeon. Salary £5 5s. per week and all found.

NEWCASTLE-UPON TYNE AND NORTHUMBERLAND SANATORIUM FOR CONSUMPTIVES, Barrasford, North Tyne.—Resident Medical Officer.

NOTTINGHAM GENERAL HOSPITAL.—Two House Physicians and One Assistant House Surgeon for six months. Salary at rate of £250 per annum each, with board, &c.

PRESTON, LANCS, COUNTY ASYLUM, Whittingham.—Locum Tenens, unmarried. Salary £7 7s. per week, with board, &c.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Dental Surgeon.

SALFORD UNION INFIRMARY, Hope, Pendleton, near Manchester.—Female Assistant Resident Medical Officer. Salary £250 per annum, with board, &c.

SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—Female Junior House Surgeon, unmarried, for Gynæcological and Maternity Departments. Salary £200 per annum, with board, &c.

SHEFFIELD, ROYAL INFIRMARY.—Two House Surgeons. Salary £100 per annum, with board, &c.

SHEFFIELD UNION HOSPITAL, Firvale.—Resident Assistant Medical Officer. Salary £400 per annum, with rations, &c.

SOUTH LONDON HOSPITAL FOR WOMEN, 103, South Side, Clapham Common, S.W.—Female House Physician and House Surgeon for six months. Salaries at rate of £100 per annum, with board, &c. Also Temporary Female Assistant Physician to Children's Department.

VENTNOR, ISLE OF WIGHT, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST ON THE SEPARATE PRINCIPLE.—Assistant Resident Medical Officer.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon and Anæsthetist. Salary £150 per annum, with board, &c.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer for six months. Salary at rate of £150 per annum, with board, &c.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Valencia and Rathmore, in the county of Kerry.

Births, Marriages, and Deaths.

BIRTHS.

DAVIS.—On Oct. 23rd, at Upper Berkeley-street, W., the wife of K. J. Acton Davis, F.R.C.S., M.C.—a daughter.

NICHOLLS.—On Oct. 20th, at Wellesley Lodge, Croydon, the wife of Dr. G. E. E. Nicholls, Temporary Lieutenant, R.A.M.C.—a son.

PATTERSON.—On Oct. 20th, at Harley-street, the wife of Norman Patterson, F.R.C.S.—a daughter.

MARRIAGES.

BYE—BRITTON.—On Oct. 21st, at the Chapel Royal, Savoy, Norman Huthnance Bye, F.R.C.S.E., to Edith Mary, only daughter of the late George Britton, of Putney and Hastings.

DRENNAN—DUDGEON.—On Oct. 19th, at All Saints Church, Blackrock, Dr. Charles Edward Drennan to Rose, second daughter of Mr. and Mrs. Dudgeon, of The Priory, Stillorgan.

FRASER—ARMSTRONG.—On Sept. 14th, at the Cantonment Church, Meiktila, Burma, Captain A. D. Fraser, R.A.M.C., to Emily Clara, only daughter of the Rev. W. D. H. Armstrong, Berrow Vicarage, Somerset.

SHERMAN—BROOKE.—On Oct. 23rd, at St. Alfege, Greenwich, Captain Reginald Sherman, R.A.M.C., to Dorothy Raffles, elder daughter of J. Raffles Brooke and Mrs. Brooke, Osborne House, Formby, Lancs.

DEATHS.

THOMSON.—On Oct. 21st, at Lowestoft-road, Gorleston-on-Sea, David Thomson, L.R.C.P. & S. Edin., L.F.P.S. Glasg., aged 55.

WATERS.—On Oct. 14th, at Dorset-road, Bexhill-on-Sea, Avery Clough Waters, M.B., J.P., late of Whitegates, Southend-on-Sea, aged 54 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

The following journals, magazines, &c., have been received:—Annales de l'Institut Pasteur, Journal of Comparative Pathology and Therapeutics, Journal of Larnygology, Rhinology and Otology, New Zealand Medical Journal, St. Mary's Hospital Gazette, Archives of Radiology and Electro-therapeutics, American Journal of Medical Sciences, American Journal of Obstetrics, American Journal of Surgery, Nordiskt Medicinskt Arkiv; British Journal of Children's Diseases, American Journal of Orthopædic Surgery, Saint Paul Medical Journal, American Medicine, &c.

Notes, Short Comments, and Answers to Correspondents.

"AN IMPORTANT DISCLAIMER."

THE poet remarked that "some men are born to fame, some men acquire it, and some have honours thrust upon them." Mr. Eustace Miles (M.A. Cambridge) has for many years been in the second class as a champion racket and tennis player and as the owner or conductor of a restaurant bearing his name. He is now, as we learn from a document which lies before us, the title of which we have borrowed, in the third class. To quote his own words, he "in view of the letters that he has received addressed to him as 'Dr. Eustace Miles,' wishes to make it clear—in order to prevent misunderstanding—that he is not a qualified Medical Practitioner; and that—while he appreciates at its true value the special training and hard work of the medical profession—he himself advises people rather as to simple methods of cure (through Diet, &c.) which most Doctors have not (like himself) studied and practised assiduously and effectively for years. He does not undertake to prescribe heavy doses of drugs nor to operate." His medical position has been thrust upon him.

We learn further from the "important disclaimer" that for a good many years Mr. Miles "has been professionally advising consultants (including qualified medical practitioners, who sometimes consult him about their own diet, or the diet of their patients)," and that he advises on such matters as Diet, simple Water Treatments, simple Mental Helps, &c. He likes to have full particulars and the medical opinions on each case, and "he then himself prepares a written Health Course or Diet Course, preferably after a Personal Interview (lasting for half an hour or more) with or without an Examination of the Blood, Urine, &c., by a leading Clinical Analytical Expert." The expert, we are informed in another document, is a Mr. Collings, who is there described as "the greatest living Expert." Mr. Miles, however, appears to be willing to give advice by correspondence without the personal interview and without the analytical examination, and we observe that in his tariff of fees "the Full Health Course by Correspondence" costs 2 guineas.

If Mr. Miles is well advised he will stop trying to do work which only a properly trained medical man should do; for despite his disclaimer he is acting in a medical capacity. No one but a medical man has the knowledge necessary to prescribe diets, or exercises, or water treatments upon information acquired from examinations of the blood, urine, or excreta, as no one but a medical man can understand the significance of the information. Mr. Miles's action may not be illegal as the law stands, and unqualified advisers on health have a singular attraction for many minds, but both he and his patients are taking grave risks.

THE PROLIFICITY OF OPPOSITE TWINS.

To the Editor of THE LANCET.

SIR,—The belief mentioned by "H. S. S." in your issue of Oct. 21st has probably arisen from the experience of cattle-breeders. The name "free-martin" was given by Bewick to a cow-calf twin-born with a bull-calf. It has been known from ancient times that she usually proves barren. The subject has been studied by Spiegelberg (1861), Dr. Berry Hart, and Professor Bateson. Sterile free-martins occur only rarely in sheep (Bateson). A clue to the understanding of this subject has recently been given by the paper of Professor Frank R. Lillie, entitled "The Theory of the Free-martin" in *Science*, 1916, N.S. xliii., April 28th, pp. 611–613. He finds that in cattle a twin pregnancy is almost always a result of the fertilisation of an ovum from each ovary; development begins separately in each horn of the uterus; the ova meet and fuse in the small body of the uterus at some time between the 10 and 20 mm. stage. The blood-vessels from each side then anastomose in the connecting part of the chorion. A particularly wide arterial anastomosis develops so that either fœtus can be injected from the other. The arterial circulation of each also overlaps the venous territory of the other, so that a constant interchange of blood takes place. If the twins be hetero-sexual the reproductive system of the female is largely suppressed, and certain male organs even develop in the female. This is unquestionably to be interpreted, he says, as a result of hormone action. It is uncertain whether the invariable result of sterilisation of the female at the expense of the male is due to more precocious development of the male hormones or to a certain natural dominance of male over female hormones. Lillie found in a fertile cattle free-martin that the two chorions were entirely unfused; thus he explains the existence of the fertile free-martin. The sterile free-martin is sterilised at the very beginning of sex-differentiation, and for a long time afterwards male hormones circulate in the blood. Yet, in spite of this, the reproductive system is for the most part female though greatly reduced. Further work is promised by Lillie. If man resembles cattle in this matter then the case mentioned by you forms an exception to the rule. It would be difficult to prove that a sterile "human free-martin" is sterile because of her hetero-sexual twin-birth, for the causes of sterility in women are many. But the question for the statistician is, "Are most human free-martins sterile?"

I am, Sir, yours faithfully,

London, N.W., Oct. 21st, 1916. LEONARD J. KIDD.

P.S.—I have given Professor Lillie's description almost verbatim.

THE CONCERTED STUDY OF ENDOCRINOLOGY.

WE have received No. 1, Vol. I., of a publication entitled *The Link between Members of the Association for the Study of the Internal Secretions*. The editor, Dr. Henry R. Harrower, of Los Angeles, provides "medical editors" with some editorial paragraphs for them to employ if they desire, or improve upon in their "own words and style." These paragraphs tell us that the association has been inaugurated with the object of correlating the work of physicians and other students of endocrinology in different parts of the world. We learn that "the charter membership includes nearly 300 physicians in every branch of medical practice, and many of those laboratory workers who are delving into the fascinating mysteries of this field." A scientific bulletin is to be published containing a resume of the work done in this "ever broadening and highly profitable study." The concerted study of the internal secretions may lead to a concerted demand for pharmaceutical preparations of these secretions which may make the study a "highly profitable" one in certain directions, but on broader lines we fail to see much in the programme of promise to scientific medicine. We do not know how the accepted leaders of medical thought in the United States may estimate the movement, as their names do not appear in "the list of applications for charter membership." On the inducement supplied by Vol. I., No. 1 of *The Link*, &c., we cannot recommend our readers to support the movement pecuniarily.

BALACLAVA SURVIVORS' RELIEF FUND.

THAT the hardships of military campaigns are not incompatible with long life is shown by the presence among us of survivors of the charge of the Light Brigade in 1854, the anniversary of which occurred on Wednesday, Oct. 25th. As these heroes must have long passed the age allotted to man by the Psalmist, it is gratifying to know that the needy among them and the widows of those who are dead are being cared for by the Fund which was founded for this purpose in 1897 by the late Mr. T. H. Roberts. But the money in hand is now nearly exhausted. An earnest appeal is being made for immediate financial aid, and donations and subscriptions can be sent to the treasurer, Mr. H. Wyndham Down, the manager of the London and South-Western Bank, Fleet-street, E.C., or to the honorary secretaries, 66, Hatton-garden, E.C. All services in connexion with the administration of the Fund are given free.

THE MEDICAL SERVICE OF THE FRENCH ARMY IN 1849.

THE following figures from the *Annuaire Militaire de la République Française* for 1849 are interesting as affording a comparison with those of the present day (best known to our gallant Ally). The ordonnance of Oct. 19th, 1841, fixed the "cadre constitutif" or the nucleus of units of the "Officiers de Santé" (officers of the Army Medical Service) as follows on a peace footing: A total effective of 1377 officers, of which 127 were Médecins, 1137 chirurgiens, and 113 pharmaciens. The 127 doctors comprised 2 inspecteurs, 14 principaux, 66 ordinaires, and 45 adjoints. The 1137 chirurgiens comprised 2 inspecteurs, 24 principaux, 249 majors, 402 aides-majors, and 460 sous-aides. The 113 pharmaciens comprised 1 inspecteur, 10 principaux, 36 majors, and 66 aide-majors. The surgeons, it will be seen, were nearly ten times as many as the "doctors." The Conseil de Santé des Armées, which then sat at the Ministry of War in the rue Saint-Dominique, No. 82, consisted of five members—that is, two médecin-inspecteurs, two chirurgiens-inspecteurs, and one pharmacien-inspecteur. Their names were Alquié, Vaillant, Bégin, Pasquier, Brault, Baudens (a coöpted member), and Judas, secretary. The Minister for War at the time was Joseph Marcellin Rullière, who was appointed on Dec. 22nd, 1848. In THE LANCET of Feb. 6th, 1909, we published an annotation which is of added interest to-day, on "The Medical Department of the French Army: its Evolution and Campaigns

from 1708 to 1882." In 1849 Magendie, the famous surgeon, curiously enough, had an official job with 11 others in looking after the horses (Commission d'Hygiène Hippique) of the French Army and not the men. The relative value of horses and men at that time may now be food for historical cogitations; but nowadays we have automobiles, and it is the petrol supply which is food for thought.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.
THURSDAY.—Papers:—Prof. H. Lamb: On Waves in an Elastic Plate.—Prof. W. H. Young: (a) On Multiple Integrals; (b) On the Order of Magnitude of the Coefficients of a Fourier Series.—Mr. T. C. Sutton: A Determination of the Heat of Vapourisation of Water at 100° C. and 1 Atmosphere Pressure in Terms of the Mean Calorie (communicated by Dr. E. H. Griffiths).—Mr. G. H. Livens: On the Mechanical Relations of the Energy of Magnetisation (communicated by Sir Joseph Larmor).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
MEETINGS OF SECTIONS.

Tuesday, Oct. 31st.

PSYCHIATRY (Hon. Secretaries—Bernard Hart, G. F. Barham): at 8.30 P.M.
Presidential Address:
Dr. R. Percy Smith: Mental Disorders in Civilians arising in Connexion with the War.

Wednesday, Nov. 1st.

OPHTHALMOLOGY (Hon. Secretaries—Elmore W. Brewerton, Arthur W. Ormond): at 8.30 P.M.
Card Case:
Mr. G. Winfield Roll: Congenital Pigmentation of the Optic Disc.
Papers:
Lieut.-Colonel and Mrs. R. H. Elliot: The Photography of Macroscopic and Microscopic Eye Specimens.
Dr. Frank Taylor and Mr. Fleming: Bilateral Glioma of the Retina with Multiple Metastases.
Mr. Arnold Lawson: Notes on (1) A Case of Recurrent Glioma of the Retina; (2) Three Cases of Fur Infection of the Conjunctiva.

Thursday, Nov. 2nd.

OBSTETRICS AND GYNÆCOLOGY (Hon. Secretaries—H. Russell Andrews, T. G. Stevens): at 8 P.M.
Special Discussion:
On "The Need for Improvement in the Care of Pregnant Women."
Dr. S. G. Moore (Huddersfield) will introduce the discussion and the different sections will be opened by the following:
Dr. Amand Routh: The Importance of getting all Pregnant Women under Supervision and affording them the Necessary Treatment.
Dr. Comyns Berkeley: The Importance of getting Medical Practitioners and Midwives to Co-operate with the Local Health Authorities.
Lady Barrett: The Importance of linking up all Organisations for Maternity and Child Welfare in Local Health Districts.
The following will take part in the discussion: Professor Briggs, Sir Francis Champneys, Dr. Eardley Holland, Professor Munro Kerr, Dr. Maclean, and Miss Rosalind Paget.

Friday, Nov. 3rd.

LARYNGOLOGY (Hon. Secretaries—Cecil I. Graham, Frank A. Rose): at 4 P.M.
Cases and Specimens:
Dr. Dan McKenzie, Dr. John McKeith, Dr. Wyatt Wingrave, Dr. Irwin Moore, Mr. Stuart Low, Sir StClair Thomson, and others.

ANÆSTHETICS (Hon. Secretaries—F. E. Shipway, Ashley S. Daly): at 8.30 P.M.
Communications:
Mr. W. M. Mollison: Successful Case of Heart Massage following Heart Failure under an Anæsthetic.
Dr. M. S. Pembrey and Dr. F. E. Shipway: Observations on the Composition of Air under Masks during Ether Anæsthesia.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith-road, W.
FRIDAY.—8 P.M., Clinical Meeting. Cases from the Hammersmith Military Orthopædic Hospital will be shown by Major Morgan (for Mr. Trethowan), Captain N. Dunn, Captain Elmslie, and Mr. M. Aitken, who will also show some Lantern Slides. Cases will also be shown by Members of the Staff of the Fulham Military Hospital, and others.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.
THURSDAY—5 P.M., Bradshaw Lecture:—Dr. H. Mackenzie: Exophthalmic Goitre.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.
MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.
TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY.—Clinics:—10.30 A.M., Surgical Out-patients (Mr. E. Gillespie). 2.30 P.M., Medical Out-patients (Dr. T. R. Whipham): Gynæcological Out-patients (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).
TUESDAY.—2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. Howell Evans); Nose, Throat, and Ear Out-patients (Mr. C. H. Hayton). Radiography (Dr. Metcalfe). 3.30 P.M., Medical In-patients (Dr. A. J. Whiting).
WEDNESDAY.—Clinics:—2.30 P.M., Throat Operations (Mr. C. H. Hayton). Children Out-patients (Dr. T. R. Whipham); Eye Out-patients (Mr. R. P. Brooks); Skin Out-patients (Dr. H. W. Barber). 5.30 P.M., Eye Operations (Mr. R. P. Brooks).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patients (Dr. A. J. Whiting); Surgical Out-patients (Mr. Carson); Radiography (Dr. Metcalfe). 3 P.M., Medical In-patients (Dr. R. M. Leslie).
FRIDAY.—2.30 P.M., Surgical Operations (Mr. Howell Evans). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. E. Gillespie); Eye Out-patients (Mr. R. P. Brooks).

ST JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.
TUESDAY.—6 P.M., Dr. W. K. Sibley: Eczema and its Treatment.
THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Lichen and Lichenification.

THE THROAT HOSPITAL, Golden-square, W.
MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

CHADWICK PUBLIC LECTURES.
THURSDAY (at the Norwich Museum).—3 P.M., Dr. C. Porter: The Health of the Future Citizen—Lecture I., Motherhood and the Care of the Mother (illustrated with lantern slides).
FRIDAY (at the Lecture Room of the Royal Society of Arts, John-street, Adelphi, W.C.).—5.15 P.M., Professor William Stirling: Fatigue, and its Effects on Industry and Efficiency—Lecture II.: Some Industrial Aspects of Fatigue (illustrated with lantern slides).

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 25th, 1916.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Tem.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 19	29·996	N.	...	91	56	51	48	51	Cloudy
,, 20	30·300	N.E.	...	60	50	43	43	47	Cloudy
,, 21	30·120	S.E.	...	82	50	37	37	39	Hazy
,, 22	29·920	S.E.	...	84	52	39	37	39	Cloudy
,, 23	29·880	S.	...	93	60	39	50	52	Cloudy
,, 24	29·760	S.W.	0·03	80	57	50	51	52	Cloudy
,, 25	30·234	S.	0·08	63	56	50	50	51	Raining

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